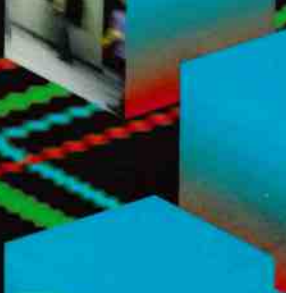
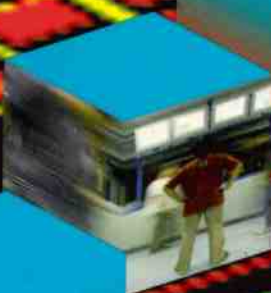


ICT  
EDUCATION  
INTERMEDIATE  
TECHNOLOGY  
DEVELOPMENT

ICT  
EDUCATION  
INTERMEDIATE  
TECHNOLOGY  
DEVELOPMENT



possibilities  
beyond  
moving

TACS  
Technology and Services Information System

e-ICT  
EDUCATION  
INTERMEDIATE  
TECHNOLOGY  
DEVELOPMENT

2007











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## Glossary

AI3	Asian Internet Interconnection Initiatives	DA-BPI	Department of Agriculture-Bureau of Plant Industry	FITS	Farmers' Information and Technology Service
AIST	National Institute for Advanced Industrial Science and Technology	DBM	Department of Budget and Management	FNRI	Food and Nutrition Research Institute
APAN	Asia-Pacific Advanced Network	DENR-PAWB	Department of Environment and Natural Resources-Protected Area and Wildlife Bureau	FOSS	Free and Open Source Software
APNIC	Asia Pacific Network Information Centre	DFA	Department of Foreign Affairs	FPGA	Field Programmable Gate Array
APRICOT 2009	Asia Pacific Regional Internet Conference on Operational Technologies 2009	Digitel	Digitel Telecommunications Philippines, Inc.	FPRDI	Forest Products Research Development Institute
ASTI	Advanced Science and Technology Institute	DMM	Digital Multimeter	G-DAT	GSM/GPRS Data Acquisition Terminal
BCH	Biosafety Clearing House	DNS	Domain Name System	GEANT2	Gigabit European Academic Network 2
BellTel	Bell Telecommunications Philippines	DOH	Department of Health	GIMP	GNU Image Manipulation Program
BFAD	Bureau of Food and Drugs	DOST	Department of Science and Technology	Globe Telecom	Globe Telecommunications, Inc.
BGP	Border Gateway Protocol	DOST-CAR	DOST-Cordillera Autonomous Region	GNU	GNU's Not Unix
Biotech	National Institute of Molecular Biology and Biotechnology	DOST-OASECTT	DOST Office of the Assistant Secretary for Technology Transfer	GPRS	Global Packet Radio System
BL	Bayanihan Linux			GPS	Global Positioning System
BL4	Bayanihan Linux version 4	DOST-TECHNICOM	DOST's Technological Innovation and Commercialization Program	GSM	Global Systems for Mobile Communication
BMC	Bicol Medical Center	DOT	Department of Tourism	HOR	House of Representatives
BPS	Bureau of Product Standards	DOTC	Department of Transportation and Communications	HRM	High Resolution Model
BSP	Balik Scientist Program	DSL	Digital Subscriber Line	IC	Integrated Circuit
C-CARRD	Caraga-Consortium for Agriculture Regional R&D	DWD	Deutscher Wetterdienst	ICT	Information and Communications Technology
CAI	Computer-Aided Instructions	DWMM	Digital Wood Moisture Meter	Infosys	Information System
CED	Communications Engineering Division	e-NGAS	Electronic New Government Accounting System	IOSN	International Open Source Network
CHED	Commission on Higher Education	e-Nutrition	Establishment of the Philippine's Knowledge Center on Food and Nutrition project	IP	Internet Protocol
CICT	Commission on Information and Communications Technology	ECE	Electronics and Communications Engineering	IP-PBX	Internet Protocol-Private Branch Exchange
CIDA	Canadian International Development Agency	EGEE	Enabling Grids for E-Science	IPB	Institute of Plant Breeding
CIDG-PNP	Crime Investigation and Detection Group of the Philippine National Police	EMC	Electromagnetic Compatibility	IPv6	Internet Protocol Version 6
COA	Commision on Audit	ENUM	Telephone Number Mapping	IRME	Internet Resource Management – Essentials
COMELEC	Commission on Elections	EuAsiaGrid	European Union-Asia Grid	IRRI	International Rice Research Institute
COST	Asean Committee on S&T	FAD	Finance and Administrative Division	ISP/IXP	Internet Service Provider/Internet Exchange
CSD	Computer Software Division	FAITH	First Asia Institute of Technology and Humanities	IT	Information Technology
CV-CIRRD	Central Visayas Consortium for Integrated Resources Research and Development	FGDs	Focus Group Discussions	ITDI	Industrial Technology Development Institute
				JAXA	Japan Aerospace Exploration Agency
				JP-PH	Japan Philippine



# Table 11 – External Scientific and Technological Networks

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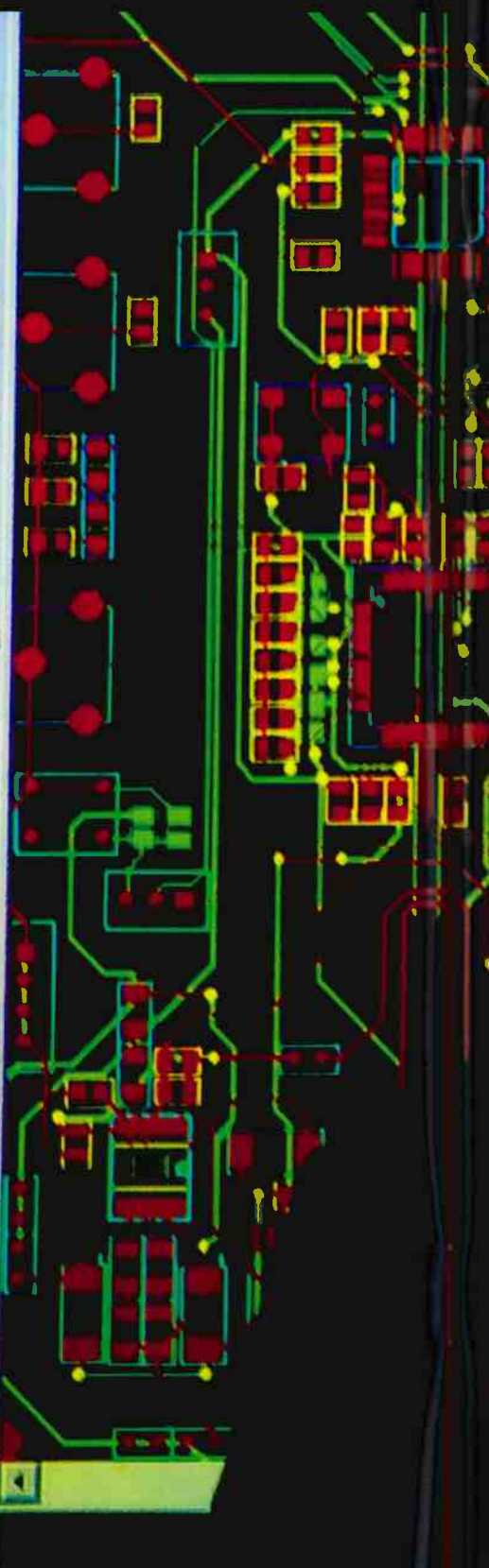
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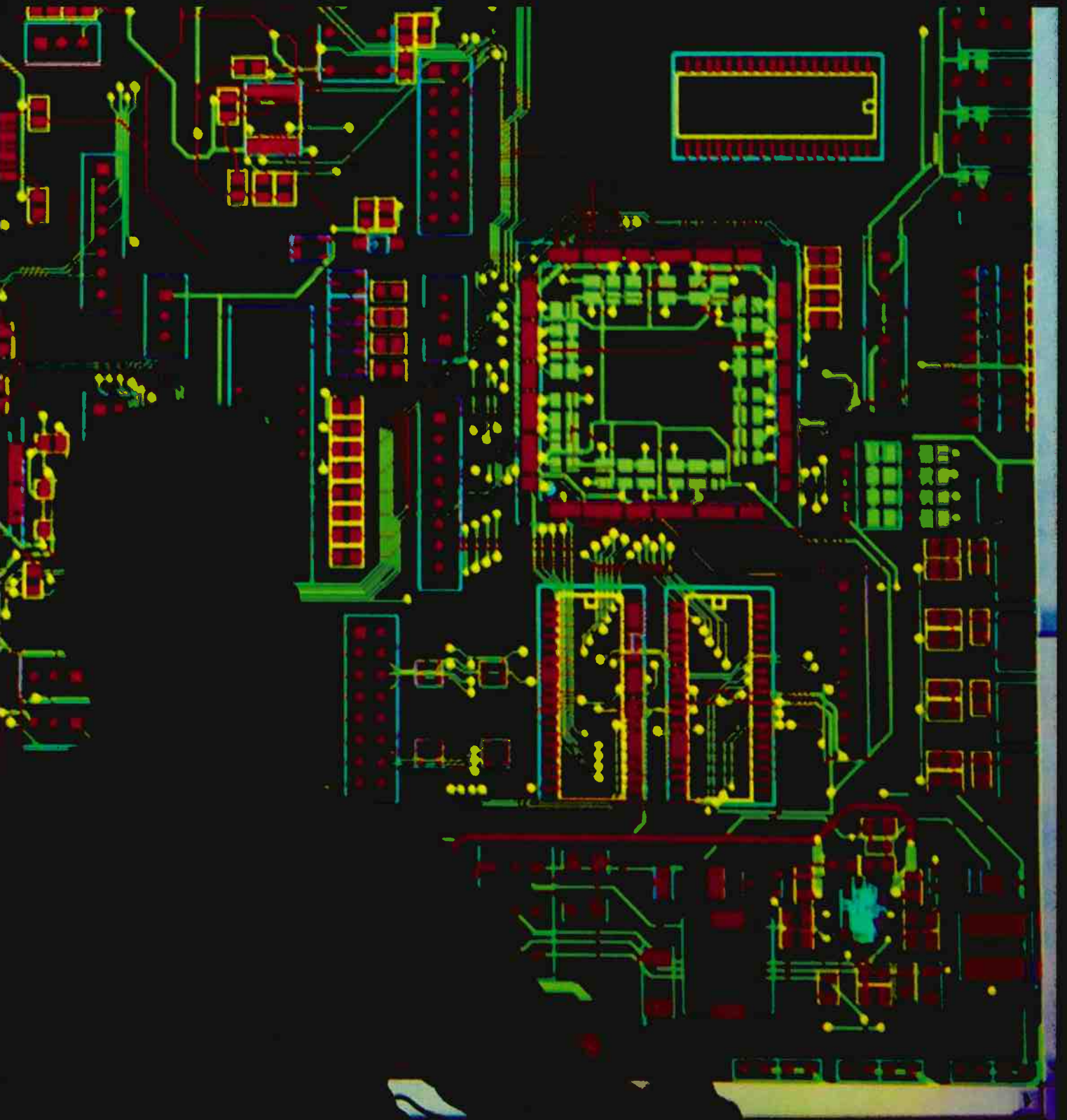
IRU	Iloilo Rizal University	PCIERD	Philippine Council for Industry and Energy Research and Development	SEI	Science Education Institute
JSPS	Japan Society for the Promotion of Science	PGH	Philippine General Hospital	SMARRDEC	Southern Mindanao Agriculture Regional R&D Consortia
K-AGRINET	Knowledge Networking Towards Enterprising Agricultural Communities project	Philcom	Philippine Global Communications, Inc.	SME	Small and Medium Enterprise
LCD	Liquid Crystal Display	PHNOG	Philippine Network Operators Group	SMS	Short Message Service
LMOs	Living Modified Organisms	PhOpenIX	Philippine Open Internet Exchange	SOI-Asia	School of Internet Asia
MAFFIN	Ministry of Agriculture, Fisheries and Forestry Information Network (of Japan)	PICWIN	PAGASA Interactive Climate and Weather Information Network	SPD	Special Projects Division
MCUs	Microcontrollers	PLDT	Philippine Long Distance Telephone Company	TACIS	Tests, Analyses, and Calibration Information Systems
MED	Microelectronics Division	PNC-UNESCO-IHP		TCDC	Tanza Child Development Center
MFO	Major Final Output		Philippine National Committee for the United Nations Educational, Scientific, and Cultural Organization International Hydrological Programme	TCP	Transmission Control Protocol
MIRDC	Metals Industry Research and Development Center	PNU	Philippine Normal University	TEIN2	Trans-Eurasia Information Network 2
MIS	Management Information Systems	PRAGMA	Pacific Rim and Grid Middleware Assembly	TEIN3	Trans-Eurasia Information Network 3
MIT	Mapua Institute of Technology	PREGINET	Philippine Research, Education and Government Information Network	TELOF	Telecommunications Office
MM5	Mesoscale Model	PS	Personal Services	TNL	The National Library
MOA	Memorandum of Agreement	PSHS	Philippine Science and High School	UnPLUG	UP Linux Users Group
MOOE	Maintenance and Other Operating Expenses	PTRI	Philippine Textile Research Institute	UP CAPES	Career Assistance Program for Engineering Students
MSU	Mindanao State University	QCSC	Quezon City Science Community	UP-CSRC	Computational Science Research Center, University of the Philippine
MSU-IIT	Mindanao State University-Iligan Institute of Technology	R & D	Research and Development	UPLB	UP Los Baños
NCC	National Computer Center	RDIs	Research and Development Institutes	USC	University of San Carlos
NICU	Neonatal Intensive Care Units	RENs	Research Education Networks	USJR	University of San Jose Recoletos
NNS	National Nutrition Survey	RF	Radio Frequency	VCTI-Micro	Virtual Center for Technology Innovation - Microelectronics Design for Philippine Electronics Industry, An Essential Component for Global Competitiveness: Phase II – Digital, Analog & Mixed Signal Components for Signal Processing and Wireless Applications
NORSE	Negros Oriental State University	RMIS	Regional Management Information Services	VHDL	Very High Speed Integrated Circuit Hardware Description Language
NREN	National Research and Education Network	ROs	Regional Offices	VICARP	Visayas Consortium for Agriculture and Resources Program
NSTW	National Science and Technology Week	S&T	Science and Technology	VoIP	Voice over Internet Protocol
OD	Office of the Director	SCS	Scientific Career System	WINDS	Multicast Experiment using the Wideband InterNetworking Engineering and Demonstration Satellite
PAGASA	Philippine Atmospheric, Geophysical, and Astronomical Services Administration	SEACOOP	Further Developing Strategic Science and Technology Cooperation with Southeast Asia on Information and Communications Technology	WLAN	Wireless Local Area Network
PBX	Private Branch Exchange			YTC	Yongden Technology Corporation
PCARRD	Philippine Council for Agriculture, Forestry and Natural Resources Research and Development				
PCASTRD	Philippine Council for Advanced Science and Technology Research and Development				

# vision

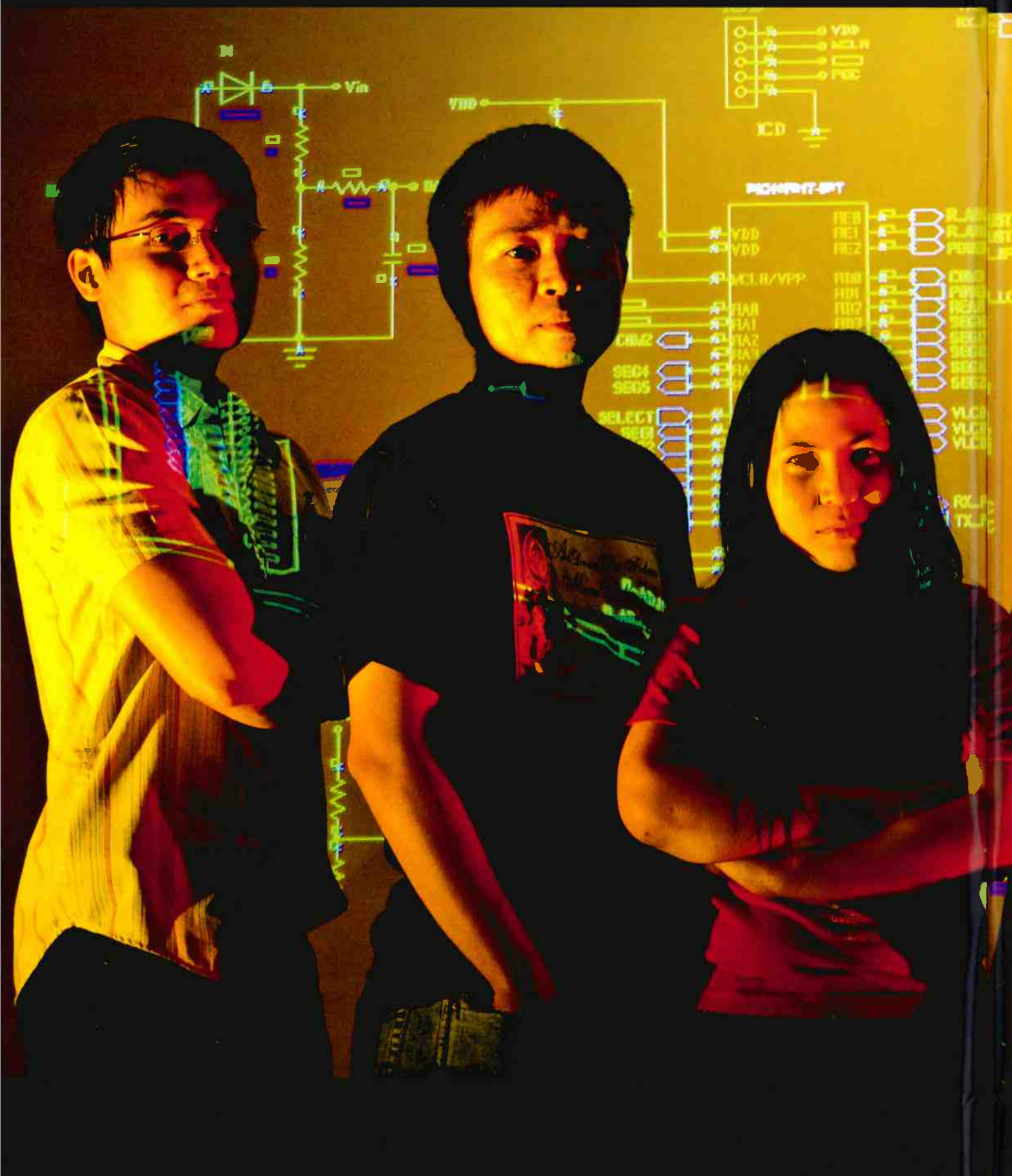
THE ADVANCED  
SCIENCE AND  
TECHNOLOGY  
INSTITUTE shall  
be among the  
leading Research  
and Development  
centers in  
Information and  
Communications  
Technology (ICT)  
and Electronics  
within the South  
East Asian region.















# mission

THE ADVANCED SCIENCE AND TECHNOLOGY INSTITUTE is committed to the development of the Filipino society and the Philippines as a nation.

We shall contribute to the attainment of national development priorities and the growth of Philippine enterprises by providing innovative solutions using ICT and Electronics technology.



# MESSAGES

I COMMEND ASTI'S CONTINUED COMMITMENT TO SUPPORT SUSTAINABLE NATIONAL DEVELOPMENT THROUGH EXCELLENT INNOVATIONS IN THE FIELDS OF ICT AND ELECTRONICS.

ASTI, together with its partners, was able to reach new heights in the generation and diffusion of knowledge and technologies, and in the provision of quality S&T services to address the needs of its clientele and of globalization.

My deepest appreciation to ASTI's strong workforce, who has further proven in CY2007 that the culture of teamwork, the endeavor for excellence, and the dedication to leadership, is the key to the Institute's success.

To all of ASTI and its partners, thank you and congratulations on another very productive year!







**Dennis Villorinto**  
ASTI President



#### ANOTHER SUCCESSFUL AND PRODUCTIVE YEAR HAS PASSED FOR ASTI.

We are proud to have served our fellow Filipinos as well as our international associates in the ICT and electronics research and development community.

For year 2007, the Institute saw an increase in the number of technologies developed, diffused, and commercialized. Out of the seventeen (17) projects lined up for the year 2007, four (4) were newly-established, four (4) saw their completion by the end of the year, and nine (9) will be pushing through to 2008.

Together with the expansion and enhancement of the Institute's R&D and S&T infrastructures, several trainings were conducted and consultancy services rendered. The knowledge and skills of its staff were also upgraded through participation in trainings, workshops, conferences, and other capability building initiatives.

With ASTI's continued commitment to support the country's national and economic development, we assure our stakeholders that we will continue to enhance our services in the years to come. Emerging and relevant technologies will be deployed and new products will be developed to benefit the country and at the same time enhance the competence and global competitiveness of ASTI.

To my colleagues at ASTI and our valued partners, thank you for all your support and cooperation in our endeavors. Join me in solidifying ASTI as a prominent R&D institute that continues to serve our country and makes better the life of every Filipino through initiatives and innovations in the field of ICT and Electronics.



**Dennis Villorinto**  
ASTI President

# HIGHLIGHTS

**YEAR 2007** presented many milestones for ASTI as it completed several research projects whilst launching major new R&D programs and making substantial progress with on-going projects and services. These projects maintained ASTI's focus on the thematic areas of Enterprise Development, e-Governance, Education, and Environment to ensure relevant and significant long-term impact on economic growth and sustainable development.

**E-GOVERNANCE** Through the Knowledge Networking Towards Enterprising Agricultural Communities (K-Agrinet) project, eighty-seven (87) FITS Centers and Regional Consortia now have access to the Internet and can acquire new technologies while cutting down on their communication and travel expenses. As for the project on the Design and Development of Information Systems for the "Balik Scientist" Program, Scientific Career System (SCS) and Japan Society for the Promotion of Science, the program's websites were enhanced, information systems were developed, and technical trainings were conducted. Other e-governance projects include e-Nutrition, TACIS, Development of the National Biosafety Clearing House Information System, Adoption of ASTI-developed Infosys by the Commission on Higher Education (CHED), and Upgrading of Facilities of the DOST Research and Development Institutions.

**ENTERPRISE DEVELOPMENT** Bayanihan Linux 4 (BL 4) was officially released and along with, three (3) products under Embedded Systems Development were commercialized, namely: Digital Multimeter (DMM), GSM Data Terminal, and PicMe. Together, these four (4) products were distributed to 585 clients. Other than Embedded Systems Development, other projects include the Development and Commercialization of Locally Designed Digital Wood Moisture Meter, and the Installation of New Internet Protocol- Private Automatic Branch Exchange Telephone System Including Integration of Paging System for Bicol Medical Center.

The accomplishment of the second phase of "Radio Frequency (RF) Microelectronics for Wireless Technologies" produced RF transceiver kits, RF trainings and e-learning modules, WiFi antenna system, a position paper, and a case study. Another project for enterprise development that was completed during the year is Microelectronics Design for Philippine Electronics Industry, An Essential Component for Global Competitiveness: Phase II - Digital, Analog & Mixed Signal Components for Signal Processing and Wireless Applications or VCTI-Micro, which gave way to technology transfer activities in the field of microelectronics. Under VCTI-Micro, an integrated circuit design laboratory was also built for research purposes.





**EDUCATION** PREGINET has expanded its network connection to 166 institutions whilst hosting a major regional networking conference and setting up the Philippine Open Internet Exchange. On the other hand, Phase 3 completion of the project "Development of Computer Aided Instructions (CAI) for Science and Mathematics" brought about the maximization of the use of technology to further the cause of the aforementioned subjects in Philippine elementary schools. With the delivery of the said project, ASTI implemented a new training program on New Technologies and IT Applications Digital Electronics Design Camp.

**ENVIRONMENT** With the completion of PICWIN, enhancement on information dissemination, data acquisition, post processing and capabilities of PAGASA personnel raised the level of Philippine weather forecasting to the next level.

In recognition of the need of ASTI's vast clientele, the Institute also enhanced its intranet to improve knowledge sharing and efficiency of core business processes. It also implemented an upgrade of its computers to promote energy efficiency and flexible workplaces. To empower the private industries, academes, government and non-government organizations and the Filipino individuals that it serves, ASTI strengthened old and new ties with local and foreign partners such as the Commission of the European Communities Information Society and Media Directorate-General, and Japan Aerospace Exploration Agency. The collaborative research projects that are being undertaken through these partnerships include the SEACCOOP and the WINDS projects, among others.

With regard to the fiscal aspect, ASTI was provided a total appropriation PhP 30.898 Million, which was 11% higher from the previous year's PhP 3.468 Million. This year's budget increase was attributed to the Capital Outlay budget's augmentation of PhP 4.195 Million for the Institute's funding requirements for equipment purchases and a major building repair. The Institute also completed its migration to e-NGAS to promote transparency, efficiency, and accountability of the agency's transactions.

*raised to  
the power of*

e ICT

EDUCATION  
ENVIRONMENT  
-GOVERNANCE  
ENTERPRISE DEVELOPMENT



# MAJOR FINAL OUTPUTS

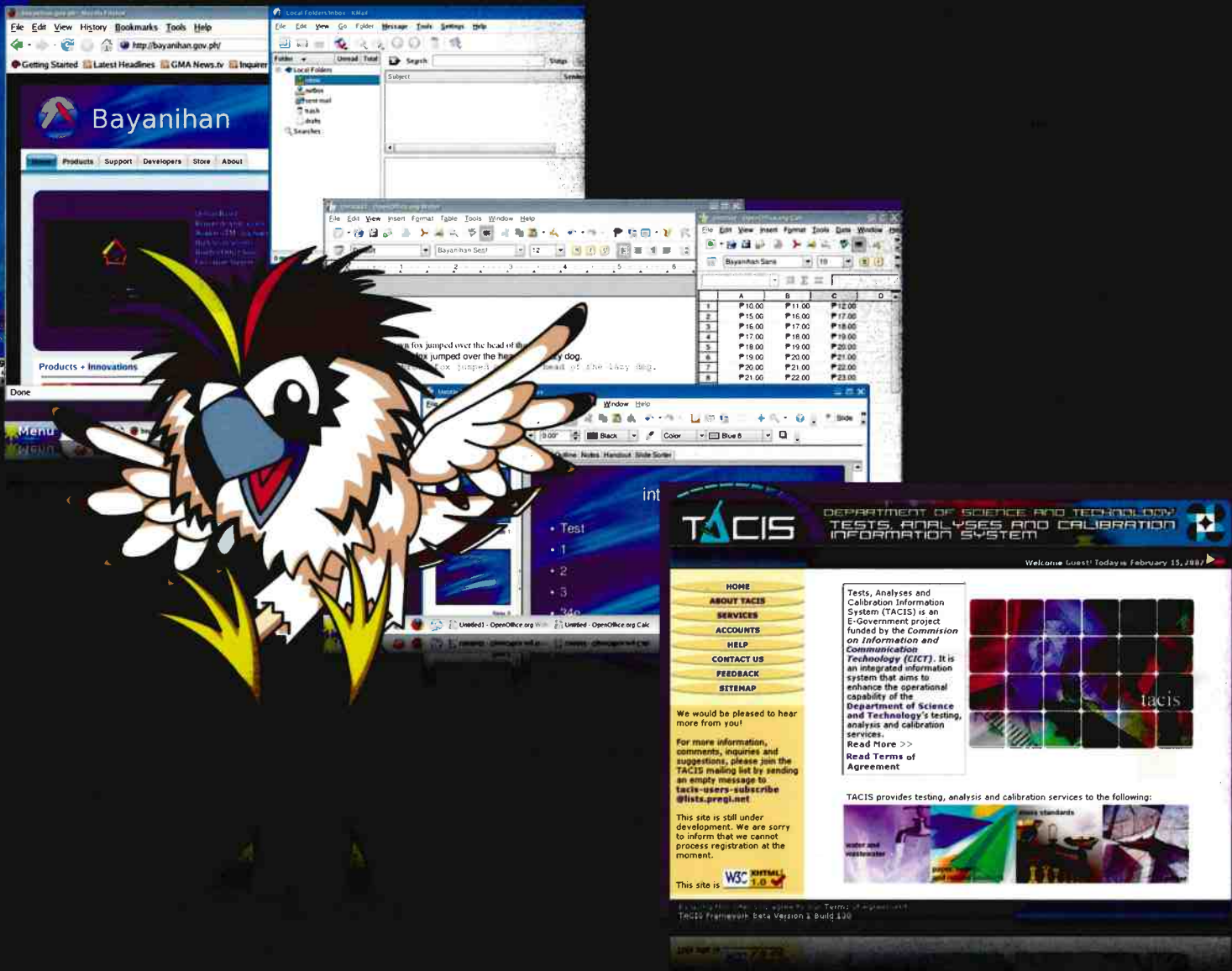
## MFO 1 – Diffusion of Knowledge and Technologies

## Technology Commercialization

The year 2007 highlighted ASTI's sustained efforts in commercializing four (4) of its products, namely:

- 1) Digital Multimeter – an affordable, handheld electrical and electronic tester used to measure voltage, current, resistance, capacitance, frequency, and transistor parameters;
- 2) Global System for Mobile Communication (GSM) Data Terminal – a data communication solution for short message service (SMS) application;
- 3) Bayanihan Linux (BL) – a complete open source desktop solution with integrated full-featured office suite, extensive multimedia and graphics





applications, mobile computing and anti-virus support; and

- 4) PicMe Microcontroller Starter Kit – a low-cost prototyping board used to jump-start embedded systems development.

Records showed that a total of 585 clients availed of these four (4) products. Among the clients noted were Lee Systems, MED Brilliance, Radio Veritas Global Broadcasting, Alabang Parts Center, Philippine Health Insurance Corp., National Disaster Coordinating Council, UP Los Baños (UPLB), Asia Pacific College, Centennial College, Philippine Science

High School (PSHS), and Tanza Child Development Center.

## Technology Diffusion

With regard to technology diffusion, most of the activities carried out consisted of software downloads, participation in road shows and design competition, the conduct of product demonstrations, and provision of informal consultancy, among others. The products, technologies, and services involved were BL, Philippine Research, Education, and Government Information Network (PREGINET), Field Programmable Gate Array (FPGA), Voice over Internet Protocol

(VoIP), videoconferencing, PicMe Microcontroller Starter Kit (PICMe), Grid, and Telephone Number Mapping (ENUM). About 2,785 clients were benefited, including government agencies such as The House of Representatives (HOR), Bureau of Product Standards (BPS), Commission on Elections (COMELEC), National Telecommunications Commission (NTC), Crime Investigation and Detection Group of the Philippine National Police (CIDG-PNP), and various academic institutions based in Luzon, Visayas, and Mindanao.

## MFO 2 – Generation of New Knowledge and Technologies

### Information and Communications Technology (ICT) Research and Development Program

#### *Development of a High Performance Research and Education Network: Philippine Research, Education and Government Information Network or PREGINET (Ongoing)*

PREGINET is a project funded by the Department of Science and Technology (DOST) and is implemented by ASTI. It stands as the country's only national research and education network (NREN) that was envisioned to be a catalyst for collaborative research and development among government, academic, and research institutions. As of December 2007, a total of 159 partners – ninety-seven (97) from research institutions, fifteen (15) from the academe, and forty-seven (47) from government institutions – have been connected to the network.

PREGINET began its implementation on June 1, 2000 and is funded at a total project cost of 79 million pesos.

The network operates nationwide through access points in most regions of the country, mostly utilizing the existing network infrastructure of the Telecommunications Office (TELOF) of the Department of Transportation and Communications (DOTC) and the facilities of domestic common carriers or telecommunications providers.

The Philippines, through PREGINET, has direct connectivity to a number of international research and education networks (RENs) such as the Asia Pacific Advanced Network (APAN) and the Trans Eurasia Information Network 2 (TEIN2). Connectivity to APAN and TEIN2 serves as the country's connection to other regional RENs including Internet2 in the United States and GEANT2 in Europe. PREGINET also participates in the Asian Internet Interconnection Initiative (AI3), a Japanese-led research initiative that provides a satellite-based open Internet test bed for the research and academic community in Asia.

Major accomplishments for 2007 include:

- ASTI hosted the 23rd APAN Meeting held from January 22 to 26, 2007 at the EDSA Shangri-la Hotel. With the theme "Saving Lives, Improving Lives Through Global Collaboration Using Advanced Networks", it was attended by 225 international participants from APAN – member countries and seventy-two (72) local participants coming from government, academe, and the industry. The attendees were mostly senior network researchers and scientists, academicians, graduate students, and IT professionals in management roles responsible for strategic partnerships and ICT

procurement decisions in their respective organizations.

- The Philippine Open Internet Exchange (PhOpenIX) was established and operated by PREGINET. It is the only exchange in the Philippine Internet industry operated by a neutral institution that allows the exchange of Internet traffic in a free-market environment among local Internet and data service providers. PhOpenIX hosts the only Root Domain Name System (DNS) located inside the Philippines thus, providing improved response time for Internet users in the country. Members of the PhOpenIX as of 2007 include ASTI, Globe Telecom, Inc. (Globe Telecom), International Rice Research Institute (IRRI), Bell Telecommunications Philippines (BellTel), Bitstop, Inc., and Philippine Global Communications, Inc. (Philcom).

PhOpenIX events organized for 2007 were as follows:

- 1) Launching of PhOpenIX and Tutorial on BGP Multihoming Techniques and The Design and Construction of Local and Regional Exchange Facilities - January 26, 2007;
  - 2) 2nd Session on the Operation of PhOpenIX – July 18, 2007; and
  - 3) Philippine Network Operators Group 2nd Meeting - December 3, 2007.
- The IRRI link was upgraded from 6Mbps to 155Mbps. The PREGINET link is significant to IRRI's operation because high-performance





networks such as PREGINET are critical in addressing simultaneous advancements in biology, communications, and computational power. Moreover, IRRI intends to share the APAN connectivity to the science and education community of Los Baños, specifically, UPLB and the research institutes under the university, namely: Institute of Plant Breeding (IPB) and National Institute of Molecular Biology and Biotechnology (Biotech).

### **Bayanihan Linux Development (Ongoing)**

In March 2007, the Bayanihan Linux Team officially released the latest version of Bayanihan Linux, the Bayanihan Linux 4 (BL4). It is a complete desktop solution with a Linux-based operating system and bundled with open source applications counting a word processor and spreadsheet program, presentation software, e-mail facility, an Internet browser, multimedia and graphics applications, among others. BL4 is freely downloadable from the Bayanihan Linux web site and other mirror sites. It can also be obtained by purchasing BL4 installation CDs at a minimal price.

To aid users in adapting to the BL environment, the Bayanihan Linux Team took the following measures:

- Creation of the 'Bayanihan Manual', which is accessible from a desktop icon, as a guide for BL4 users;
- Delivery of lectures on OpenOffice.org and BL4 training for government personnel;

- Provision of technical support through text messaging, e-mail, and phone correspondence; and
- Maintenance of online information sources, specifically, the BL web site, online forum and repository.

Throughout the year, the BL Team held seminars on Free and Open Source Software (FOSS) for various institutions from both the public and private sectors. In addition, the team participated in several exhibits and conferences such as the following:

- 1st Philippine Conference on Free and Open Source Software in e-Governance- March 7 & 8, 2007
- Multimedia and Educational Applications in Linux - August 24, 2007
- 3rd National Conference on Health Informatics - September 27, 2007
- Bayanihan and FOSS for Education - October 16, 2007

By continuing to develop effective open source solutions and making them viable alternatives, the BL Team continues its advocacy on FOSS and the use of open source systems and software.

### **Upgrading of Facilities of the DOST Research and Development Institutes in Support to Research and Development (R&D) and Scientific and Technological (S&T) Services (Ongoing)**

In general, this project targets to upgrade the facilities of DOST's research agencies by providing new equipment, maintenance for existing equipment, and capability development for the technical

staff. Currently in its first year of implementation, ASTI intended to enhance two (2) research laboratories, namely; the Open Source Development laboratory and the High Performance Computing laboratory.

For the Open Source laboratory, the project acquired equipment for the mass production of digital content and open source software along with new computers and furniture for developing and testing new open source applications and systems. This upgrade would enable the laboratory to offer new and better technological products and services to our stakeholders. Furthermore, the project enabled the High Performance laboratory to procure its initial set of equipment for setting up a computing and storage grid infrastructure that can be used to support different kinds of high-end science research such as climate modeling, bioinformatics, and disaster recovery planning as well as commercial applications that includes but is not limited to animation and rendering.



The project is funded by the DOST and is monitored by Philippine Council for Industry and Energy Research and Development (PCIERD). Meanwhile, a working group, with representatives from all the research agencies, provides the planning and implementation support to ensure the successful execution of this project.

### **Revision, Replication, and Distribution of Courseware for Science and Mathematics for Elementary Schools – Courseware Phase 3 (Completed)**

First two (2) phases of courseware development were completed in 2006 under the project "Development of Computer Aided Instructions (CAI) for Science and Mathematics". It was undertaken with a vision to improve the state of elementary science and math education in the Philippines. This year, the implementation of Phase 3 activities focused on the enhancement of the existing courseware materials through the revision of graphic, audio, and extensive animations, and interactivity of various elements in each module that were previously developed under Phase 2.

Macromedia Flash, Adobe Photoshop, and other Open Source applications like the GNU Image Manipulation Program (GIMP) were utilized in the development

of 101 lessons for the use of public school teachers. The project expected to optimize, streamline, and standardize school presentations through the use of cost-effective, high-quality software solutions that can run both in Linux

and Microsoft Windows operating systems and, more importantly, to enable the students to be more competitive through the optimal use of technology. The project was successfully completed in December 2007.

### **Establishment of the Philippines' Knowledge Center on Food and Nutrition or e-Nutrition (Ongoing)**

The e-Nutrition project seeks to improve the nutritional status of the Filipino population by providing electronically accessible information on food consumption, nutrition and health status, and other essential indicators that will be useful for policy-making, monitoring, evaluation, planning, and development of nutrition-related programs. It serves as the primary source of nutrition data such as the National Nutrition Surveys (NNS). It also include nutrition assessment that will assist local government units, non-government organizations, schools, and communities to determine the prevalence of under-nutrition and over-nutrition as well as dietary management tools for individuals to develop a healthy weight management plan.

This year, the project conducted a series of Focus Group Discussions (FGDs) in Gardenia Bakeries (Phils.) Inc., Manly Plastic Incorporation, Palawan, Pangasinan, Pasay City Hall, and UPLB. The objective of the FGDs was to come up with the prices for the products and services to be offered by e-Nutrition as well as to determine the acceptability of e-Nutrition to its intended users. The project is extended until June 2008.



### **Tests, Analyses and Calibration Information System or TACIS (Ongoing)**

TACIS, an e-Government project funded by the Commission on Information and Communications Technology (CICT), is a combination of different laboratory information systems and processes. Its main objective is to improve usability and efficiency in the delivery of several testing, analyses, and calibration or standardization services offered by the DOST to the general public. Through the availability of its system features over the Internet, it unifies the services of all DOST Research and Development Institutes (RDIs) and regional offices (ROs) by providing interactive applications that address not only the support for customer concerns but also the management of all laboratory services.

TACIS consists of three (3) major information systems: the TACIS Client Web Portal, TACIS Laboratory Web Portal, and TACIS Monitoring Web Portal. The Client Web Portal provides online interactive services to the customers. The Laboratory Web Portal is a secured system accessible only to authorized DOST personnel who handle all service monitoring and administration. As a secured application for DOST executive officials, TACIS Monitoring Web Portal allows the automation of transactions and financial reports available for viewing and reporting purposes via the Internet.

Through TACIS, the vision for an increased demand for testing and calibration services is expected since they are now more easily accessible to customers. This also implies an





increase in revenue for the DOST RDIs and ROs and an improvement in the transfer of the department's income-generating services. Through this system, requests are facilitated, services are delivered, and test certificates and reports are issued, at a faster pace. In addition, the percentage of products in the Philippine market that pass the quality standards shall increase, owing to information and services made available online. As a whole, this project is expected to bring the DOST closer to the Filipino people by helping the department achieve its goals in delivering quality services nationwide. The system is scheduled to be launched in January 2008 and is expected to be operational by then.

### **Knowledge Networking Towards Enterprising Agricultural Communities or K-AgriNet (Ongoing)**

The K-AgriNet project is a strategic approach to develop and modernize the agriculture sector. It aims to improve access to information and modern technologies through the use of ICT. It also ushers in a shift from research-based to knowledge-intensive and enterprising farm management. ASTI takes part in the program through the interconnectivity component. The deliverables under the interconnectivity component of K-AgriNet are as follows:

- Connectivity of Regional Consortia and Farmers' Information and Technology Service (FITS) Centers to the commodity internet, global research and education networks, and the PREGINET;
- Delivery of appropriate networking equipment to Regional Consortia and FITS Centers;

- Mobile internet subscription for the Regional Consortia;
- Deployment of network technologies to Regional Consortia and FITS Centers; and
- Technology transfer and training

A total of fourteen (14) Regional Consortia and eighty (80) FITS Centers need to be connected through this project. So far, ASTI has completely connected seven (7) Regional Consortia and seventy-six (76) FITS Centers. Through the use of existing infrastructure and new technologies offered by telecommunications companies, the project has been able to provide the connectivity necessary for the implementation of K-AgriNet. Providers of the existing and upcoming links include Globe Telecom, PhilCom, Tri-Isys, Digitel Telecommunications Phils., Inc. (Digitel), and Philippine Long Distance Telephone Company (PLDT). The FITS Centers are 100 percent connected via wireless and DSL links. Most of the sites utilize mobile Internet subscription through Globe Telecom and some sites are serviceable via the DSL link subscription.

With such interconnectivity, the Regional Consortia and FITS Centers are now able to utilize videoconferencing and VoIP as means of communication, resulting to greater savings on communication and other travel-related expenses.

A series of trainings for the fourteen (14) Consortia, which were attended by the Regional Management Information Services (RMIS) Coordinators, FITS Managers, and Magsasaka Scientist, was also part of the activities of the project. K-AgriNet utilizes the services being provided by PREGINET as the link was established through the PREGINET.

### **Design and Development of Information Systems for Balik Scientist Program, Scientific Career System, and Japan Society for the Promotion of Science (New)**

The project is a collaborative undertaking between the Office of the Assistant Secretary for Technology Transfer (DOST- OASECTT) and ASTI. The project aims to enhance the current websites and develop information systems for the Balik Scientist Program (BSP), Scientific Career System (SCS), and Japan-Society for the Promotion of Science (JSPS) through appropriate utilization of Open Source applications for the program's advantage.

The websites and online information systems for the application and evaluation of scholars were redesigned using development tools such as GIMP, Joomla!, Content Management System, Adobe Photoshop, Java programming language, and other Open Source applications. These information systems are beneficial to the implementing agencies, members of the academe, researchers, scientists and engineers, and the people involved in the program because of the convenience it brought in accessing information and updates, conducting inquiry, and online data entry for application forms.

ASTI conducted three (3) technical trainings to aid in the administration and utilization of the developed information systems, and they were as follows:

- System Administration Training - August 24, 2007
- Content Management Training - September 24-25, 2007
- SCS End-User Training - September 26, 2007

### *Development of the National Biosafety Clearing House Information System (New)*

Biosafety Clearing House (BCH) Information System aims to facilitate the exchange of scientific, technical, environmental, and legal information on, and experience with Living Modified Organisms (LMOs), and assist parties to implement the provisions of the Cartagena Protocol on Biosafety. This information system is a response to the need of the BCH Task Force to gather significant data from the participating agencies and collaborate with the central BCH Server. The system includes the development and setup of a central server with upload functionality and desktop applications that can extract and upload data from participating agencies to the central server. Some of the cooperating agencies include DOST, Bureau of Food and Drugs (BFAD), Department of Agriculture – Bureau of Plant Industry (DA-BPI), Department of Environment and Natural Resources – Protected Areas and Wildlife Bureau (DENR-PAWB), and Department of Health (DOH).

The project involved the conduct of workshops such as the BCH Meeting cum Workshop held in Tagaytay City on September 28, 2007 and another one held at UPLB on October 26, 2007. The workshop activities consisted of the following:

- Discussion of major points on current issues in the market regarding LMOs;
- Creation of web layout and presentation of updates for BCH web site;
- Presentation of agencies regarding document format to be uploaded to the system;

- Discussion of Competent National Authorities' process flow in BCH mechanism;
- Finalization of the database tables and forms for dynamic content;
- Testing of central portal and database connectivity for each form; and
- Finalization of data-handling classes for the system.

### *PAGASA Interactive Climate and Weather Information Network or PICWIN (Completed)*

The PAGASA Interactive Climate and Weather Information Network (PICWIN) project aimed to modernize the communications network of Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA), expedite the delivery of weather advisory services to the concerned public officials as well as the general public, and provide a platform for Philippine meteorological researchers to develop and adapt various numerical models.

One of the critical aspects of the day-to-day operations of PAGASA is the timely delivery of weather information. Efficient communication is needed internally – among the various units of the agency and also externally – with other agencies and the public. The PICWIN project identified some of the areas where communication is most critical and sought to make effective use of available technology to address this need.

Information that is collected from the synoptic stations, satellite, ships, radar and other environmental sensors may be used to create a numerical model of how the weather behaves in the Philippines, thus, producing

a more accurate weather forecast for a certain area. Through PREGINET's links to the international research and education networks such as the APAN and TEIN2, PAGASA was able to download global data from Deutscher Wetterdienst (DWD). This data defines the global forecast which can be localized (numerically) for use in the high resolution model (HRM) forecast for the Philippines. Another ASTI-developed product utilized for this project was the GSM kit. This device was used to relay synoptic data from remote stations to the PAGASA central office.

ASTI also assisted PAGASA in developing their post-processing for automation in order for manual procedures from downloading, configuring, running and post-processing are done without any human intervention. Finally, ASTI provided training and coaching on the Linux cluster system to PAGASA.

Filipinos can directly access the HRM results using SMS. This provides far-flung provinces and communities without good wireline infrastructure to be able to access important weather information almost instantly for only a few pesos. The current setup will also form the basis for the ensemble forecasting of PAGASA using HRM, mesoscale model (MM5), Eta and other weather models, and eventually, run on the cluster.



## Microelectronics and Embedded Systems Research and Development

### *Microelectronics Design for Philippine Electronics Industry, An Essential Component for Global Competitiveness: Phase II - Digital, Analog & Mixed Signal Components for Signal Processing and Wireless Applications or VCTI-Micro (Completed)*

Year 2007 marked the conclusion of one of ASTI's biggest projects in microelectronics research, the VCTI-Micro. The project aimed to catalyze advancements in microelectronic research in the Philippines through the acquisition of relevant technologies, which will bring a competitive advantage to the local industry, and through the dissemination of the acquired technologies by various technology transfer activities.

One of the major accomplishments of this project was the establishment of an integrated circuit (IC) design laboratory that is open for use by members of the academe and industry. Housed at ASTI, the laboratory contains state-of-the-art IC design tools for use in educational purposes. Several training courses on microelectronics design – specifically on Very High Speed Integrated Circuit Hardware Description Language (VHDL), Field Programmable Gate Array (FPGA), full-custom digital design, and full-custom analog design, were also developed. Trainings were conducted during the course of the project to provide a solid theoretical foundation for the hands-on experience being offered in the design laboratory. Moreover, papers on the researches conducted

were published and presented in local and international conferences.

### *Radio Frequency (RF) Microelectronics for Wireless Technologies: Phase II – Development of Advanced Broadband Wireless System (Completed)*

On its final year of implementation and wrapping up stage, ASTI commissioned the Development Academy of the Philippines to conduct an external evaluation of the project. In sum, the project was able to achieve the following milestones:

- Development and issuance of RF transceiver kits – Developed general purpose transceiver kits were distributed to twenty (20) colleges and universities nationwide as academic platforms for R&D and as educational tools.
- Trainings on Wireless technology and Internet Protocol (IP) telephony – Trainings were conducted with about thirty (30) participating colleges and universities nationwide. These resulted in the development and uploading of RF training modules in an e-learning environment as well as video demonstrations on RF equipment and RF system parameter measurements.
- Design and development of an antenna system for WiFi – Research and development paved the way to the design and development of 2.4 GHz antennas for point-to-point communication. These units were deployed and are currently being used by several government agencies in

their wireless communication systems.

- Submission of a position paper to the Commission on Higher Education (CHED) – A position paper was submitted to CHED on electrical and computer engineering (ECE) curriculum enhancement with emphasis on wireless technology.
- Pilot effort in establishing an Electromagnetic Compatibility (EMC) test and measurement facility in the country – ASTI initiated the conduct and evaluation of several market studies to determine the need for such an EMC test facility. Efforts were made to establish an operational setup on EMC test and measurement. These were successfully demonstrated when a local electronics small and medium enterprise (SME) subjected its product for an EMC pre-compliance test using ASTI's facility.

### *Embedded Systems Development (Ongoing)*

In pursuit of the Institute's mission of contributing to national development by providing innovative solutions using ICT and electronics technology, the year 2007 featured a continuous promulgation of solutions and technologies listed as follows:

#### **GSM Data Terminal**

The GSM Data Terminal is a solution designed to turn an ordinary personal computer into an SMS server. The product consists of a GSM modem card and an SMS software package that can be customized to the user's needs.

### **GSM/GPRS Data Acquisition Terminal or G-DAT**

G-DAT is a customizable and flexible platform for data logging applications through a GSM wireless network via SMS or global pocket radio system (GPRS). It provides a complete data acquisition / telemetry solution when paired with the GSM data terminal for real-time remote sensing.

### **GPS/GSM Tracking System**

The GPS/GSM Tracking System is a navigational and positioning platform based on the Global Positioning System (GPS) equipped with GSM. With this solution, one can trace and locate anything, anywhere using a mobile phone or personal computer by way of SMS or GPRS.

### **PICMe Microcontroller Starter Kit**

PICMe is a low cost prototyping board designed to jump-start and initiate embedded system skills development using microcontrollers (MCUs). The kit primarily targets university students and electronics enthusiasts who are in search of an easy-to-use development kit.

### **Digital Multimeter or DM705**

The DM705 is a very affordable handheld electrical and electronic tester. The device was developed in collaboration with Yongden Technology Corporation (YTC) and is currently available in all Alexan branches.

### **Table-Top Breast milk Pasteurizer**

This microprocessor-controlled tabletop milk pasteurizer provides a satisfactory and affordable alternative to foreign-made pasteurizers. It was designed to be used in Neonatal

Intensive Care Units (NICU) of hospitals to supply pasteurized milk to infants.

### **Development and Commercialization of Locally Designed Digital Wood Moisture Meter or DWMM (Ongoing)**

This project is a collaborative endeavor of ASTI, YTC, the Forest Product Research and Development Institute (FPRDI), and DOST's Technological Innovation and Commercialization Program (DOST-TECHNICOM). The DWMM was designed to suit the needs of the local woodworking industry. Wood moisture content is an important parameter for the woodworking industry to assure quality craftsmanship. Wood changes its size when its moisture content changes, therefore, it is imperative that woodworkers know the appropriate moisture content before processing. If this detail is ignored, unwanted effects such as shrinkage could manifest and adversely affect the quality and performance of the woodwork.

The DWMM measures resistance values and correlates these to moisture content. Some of the features include:

- Large liquid crystal display (LCD);
- Measure 6% to 30% wood moisture;
- Calibrated for use of ten (10) pre-defined and commonly used wood species;
- Auto shut-off to conserve battery;
- Auto freeze of displayed reading;

- Hinged and "never-loose" protective cap;
- Low battery indicator; and
- Compact and rugged construction.

The pins of the DWMM can penetrate up to a depth of 3/8 of an inch. The device has dimensions of 6 X 2.7 X 1.2 inches and requires a 9-Volt battery for power. In addition, the DWMM comes with a carrying pouch and a pair of spare pins.

### **Contract Research**

#### **Installation of New Internet Protocol- Private Automatic Branch Exchange (IP-PABX) Telephone System Including Integration of Paging System for Bicol Medical Center (Ongoing)**

The project started in April 2006 when the Bicol Medical Center (BMC) sought the help of ASTI to assist in the implementation of its IP-PABX design. The original project contract was supposed to have ended by April 2007. However, the completion date was moved to July 2008 due to relevant revisions on the project's Terms of Reference as well as the requirement of more time for the BMC's bidding process.

An IP-PABX uses VoIP to provide telephony switching services. It typically can switch calls between VoIP and traditional telephone users in the same way a traditional PBX does without the high cost of a hardware-based PBX.

ASTI has already conducted three (3) system inspections on the system and equipment installed by Comspec Marketing. Upon completion of the contractor's remaining deliverables and turnover of the system, ASTI will



then conduct quarterly maintenance check-ups as its remaining task.

### ***Training Program on New Technologies and IT Applications Digital Electronics Design Camp with Blended Learning Component (New)***

With advances in the field of ICT and its pervasive application in our daily lives, Digital Electronics is an area where continuous enhancement and enrichment should be done. The field of electronics has grown to include diverse applications from instrumentation and control to sophisticated communications systems. Practical applications such as robotics and embedded systems design are growing areas of interest among students. Thus, the integration of digital electronics into the high school curriculum will provide a stimulating environment for the science-inclined students and help keep pace with the current developments in science and technology.

In view of this, ASTI, together with the Philippine Science High School (PSHS) System and the Science Education Institute (SEI), aims to provide selected high schools with teacher and student training, courseware, equipment, and other related facilities for the study of digital electronics. Another goal is to introduce guided experiments that will enable these difficult concepts to be taught between the third and fourth year high school level.

In this collaborative activity, ASTI has provided collaboration and support in the development of PICMe development kits suitable for high school students. ASTI shall redesign the kit to fit into the skill set of high school students, thereby making it user-friendly. As a project counterpart, the PSHS serves as the main developer of the curricular framework for secondary school

students and teachers as well as host and conduct the teacher training and related activities. The SEI, on the other hand, provided the necessary funds to move the project forward.

### ***Adoption of ASTI - Developed Information Systems by the Commission on Higher Education (New)***

The Commission on Higher Education (CHED) adopted the Information Systems developed ASTI particularly the modules for personnel management, inventory system, operations management, and calendar / announcements. ASTI's Management Information Systems (MIS) Team provided CHED's technical staff with technical advise and on-the-job training as they customized and redesigned its own internal management information system (Infosys) portal. The project allowed CHED to leapfrog the development of its own MIS, saving significant amount of time and money, and taking advantage of ASTI's years of experience in developing information systems. The project, which also included complete documentation and development of manuals for end-users, is scheduled to be completed by March 2008.



2007 Training Participants' Profile

## **MFO 3 – Provision of Quality S&T Services**

### ***S&T Services***

#### ***Technical Services***

Provision of S&T services that are beneficial to the industry, academe, government, non-government organizations, and the Filipino people in general, is one of the major thrust of ASTI. The various S&T services offered during the year included DNS registration of government agencies, conduct of technical trainings and seminars, and provision of PREGINET services such as network services and





connectivity, server co-location, videoconferencing, video streaming and VoIP installation among others. A total of 2,779 clients were served--- 51% for DNS, 42% for training, and 7% for PREGINET. Majority of the clients for these services came from local and national government agencies along with some public and private colleges and universities. The delivery of S&T services to clients enabled ASTI to earn a gross income of PhP 3,011,346. A huge portion of this amount was generated from the connectivity and subscription fees paid by PREGINET members, which totaled to PhP 2,290,191 or 76% of the total amount. The remaining PhP 721,155 or 24% of the total amount came from the technical trainings and seminars conducted by the Institute.

### Training Services

The Training Team of ASTI conducted a total of thirty-two (32) trainings for the year 2007. Most of these trainings covered topics on the Linux Operating System using BL4 and office application systems using OpenOffice 2.2. The distribution of participants according to sector is as follows: 56% from the Government, 23% from the Academe, and 22% from the Industry. It was also determined that most of the said participants were male (65%).

For 2007, ASTI generated a gross income of PhP 721,155 or 24% of the total gross income from twenty-three (23) trainings conducted. The bulk of the income came from trainings on Java, PhP, MySQL, and Internet Service Provider / Internet Exchange Protocol. ASTI also conducted nine (9) free trainings which covered seminars

and Thin Client.

With its recent partnerships, ASTI successfully conducted workshops in collaboration with the Asia Pacific Network Information Centre (APNIC) and the Philippine Network Operators Group (PHNOG). Among the trainings conducted were BGP Multi-homing Techniques, Internet Resource Management Essentials, ISP/IXP, and Internet Protocol version 6 (IPv6). The said trainings were carried out to cater to the needs and requests of individuals coming from groups of Internet Service Providers, universities and government agencies.

### Foreign and Local Linkages

#### Foreign Linkages

*Ministry of Agriculture, Forestry and Fisheries Information Network, Japan*

Japan's Ministry of Agriculture, Fisheries and Forestry Information Network (MAFFIN) continues to provide funding support for the maintenance of the Philippines' link to the APAN. Through this Japan-Philippine (JP-PH) MAFFIN/APAN link, many research and education activities and projects have been facilitated. Access to critical data used in typhoon tracking, conduct of distance lectures and other distance education initiatives conducted between the Philippines and other foreign universities, and participation in international conferences, symposia, fora, and workshops remotely through the videoconferencing and Access Grid facilities were a few of the activities undertaken. ASTI has been the direct

and

workshops on BL, VoIP, DNS, FPGA

termination point in the Philippines of the JP-PH MAFFIN/APAN link since 2004. The link is currently at 155Mbps and ASTI is looking towards an increase in the said link's capacity to handle more content and facilitate more collaborative activities.

#### *Asia-Pacific Advanced Network*

Through PREGINET, ASTI represents the Philippines as a primary member of APAN since 2003. Asia-Pacific Advanced Network is an international R&E network which aims to facilitate and coordinate the development, deployment, operation, and technology transfer of advanced network-based applications and services in the research and education community in the Asia-Pacific region.

ASTI continued to strengthen its active participation in APAN through meetings and conferences, collaboration in the field of agriculture, natural resources, disaster management, distance education, advanced networking technologies and more. The Philippines, through DOST and ASTI, hosted the 23rd APAN Conference from January 22 to 26, 2007 at the EDSA Shangri-La Hotel, Ortigas Business District. More than 300 foreign and local participants attended the said meeting.

#### *Keio University, Japan*

ASTI and Keio University of Japan renewed their five-year cooperation agreement through the execution of a Memorandum of Agreement (MOA) on March 20, 2006. The agreement aims to promote cooperation between the two (2) institutions in education and academic research. The collaborative activities include but are not limited to the conduct of joint research activities, exchange of scientific information, support of researchers' mutual visits, and extension of other invitations to organized seminars and conferences. Major initiatives that have been undertaken by ASTI and Keio University are those of the AI3



and the School of Internet Asia (SOI-Asia) project.

AI3 is an international research consortium, which aims to develop leading technologies for the Internet such as the IPv6, multimedia communication mechanism, and applications for the advanced usage of the Internet. It supports and facilitates the development of knowledge-based information infrastructure in the Asian region. The AI3 network is part of the international Internet infrastructure based on a satellite communication system in the Asian region. ASTI has been participating in the AI3 since 1998 through PREGINET. ASTI's connection to the AI3 network allows it and its PREGINET partner institutions to conduct network-based applications such as IPv6, videoconferencing and video streaming, VoIP, e-learning, health, bioinformatics, agriculture, and disaster management. The said connectivity also enables ASTI and its PREGINET partners to participate in the activities and lectures of the SOI-Asia.

SOI-Asia is a project that aims to contribute to the higher education development in Asian countries through the enhancement of distance learning systems utilizing the AI3's Internet infrastructure. This involves the delivery of live Internet lectures to universities and research institutions in Asia. SOI-Asia also conducts research and development on necessary technologies for IT human resource development in Asia.

For 2007, the AI3 and SOI-Asia activities, lectures, and workshops participated in by ASTI encompassed, among others, SOI Lectures on Wireless Internet, WLAN Media Access, Earthquake, MANET, Object-Oriented, Mobile IP, Nomadic Devices, TCP WLAN, and Internet Crimes; the AI3/SOI Spring Meeting in Phnom Penh, Cambodia; the SOI eGlobal IPv6 Workshop, and the Mozilla 24

Add-on Competition for Software Freedom Day.

#### **Trans Eurasia Information Network 2**

TEIN has created the first large-scale research and education network for the Asia-Pacific region. It links the national networks in China, Indonesia, Japan, Korea, Malaysia, the Philippines, Singapore, Thailand, Vietnam and Australia. The high-capacity network aims to bridge the digital divide between different countries across the region. Its dual routes from Asia to Europe provide important inter-regional resilience. The aim is to build a research and education connectivity between Europe and the Asia-Pacific and within the Asia-Pacific region for the benefit of the developing countries in Asia. TEIN2 is partly funded by the European Union's EuropeAid Programme with additional support from some Asian partner countries and from the connecting institutions.

The Philippines' participation in TEIN2 started in 2004 and was made possible through DOST and ASTI. The 10Mbps connectivity of the Philippines to TEIN2 is through ASTI's PREGINET. The link was installed in March 2006. This facilitated more research and education activities of ASTI, PREGINET partners and their international partner institutions.

With the successful establishment, deployment, and positive support of partners, planning is under way for a long-term extension of the program, to be known as TEIN3. It is

intended to expand the network to meet the increasing demands of users across the region and to achieve a sustainable operating model.

#### **Asia Pacific Network Information Centre**

Asia Pacific Network Information Centre (APNIC) is one of the five (5) Regional Internet Registries currently operating in the world. It is a non-profit, membership-based organization which provides allocation and registration services to support global Internet operation. ASTI has been a member of APNIC since 2000 and participates in the APNIC - organized meetings, conferences, and workshops. ASTI and APNIC also undertake collaborative activities on trainings, establishment of Internet exchange, and other initiatives on Internet operation and management.

Through DOST-ASTI's membership with APNIC, the Philippines is slated to host the Asia Pacific Regional Internet Conference on Operational Technologies 2009 (APRICOT 2009) from



February 18 to 27, 2009 at the Hotel Sofitel, Roxas Boulevard, Manila. APRICOT provides a forum for key Internet builders in the region to learn from their peers and other leaders in the Internet community from around the world. Held annually, the ten (10) day long summit consists of seminars, workshops, tutorials, conference sessions, birds-of-a-feather (BOFs), and other fora; all with the goal of spreading and sharing the knowledge required to operate the Internet within the Asia Pacific region.

**Commission of the European Communities Information Society and Media Directorate-General**

On September 11, 2007, ASTI executed an agreement with the Commission of the European Communities Information Society and Media Directorate General on the implementation of the project entitled

"Further Developing Strategic S&T Cooperation with Southeast Asia on ICT (SEACOOOP Project)". The SEACOOOP project addresses the development of S&T cooperation on ICT between Europe and Southeast Asia.

The main project objectives are:

- 1) Identify, promote, and support cooperation opportunities of mutual interest;
- 2) Support bilateral and multilateral dialogues;
- 3) Increase awareness on EU-Southeast Asia S&T cooperation on ICT in Southeast Asia;
- 4) Disseminate project perspectives and results in the

European and Southeast Asian ICT communities; and

- 5) Develop synergies with other national and international programs and initiatives similarly addressing EU-Southeast Asia S&T cooperation on ICT.

The SEACOOOP project builds upon the achievements reached by former supported projects, namely: BASI C, ENGAGE, and GAPFILL. The expected outputs of the SEACOOOP project include:

- 1) Identification of, and support to ten (10) to fifteen (15) key opportunities of strategic cooperation, the project ambition being that these opportunities can be transformed, before the end

## Organizational Learning and Development

### Knowledge Management

ASTI's Knowledge Management (KM) Division spearheaded the following activities:

- 1) Developed a project proposal for Community of Practice as a framework for external programs;
- 2) Successfully organized various events such as APAN 2007, ASTI Day, NSTW/QCSC technology exhibits;
- 3) completed case studies on case studies / lessons learned documentations and write-ups for PREGINET, Milk Pasteurizer, Wizard Configuration Tool, Courseware, Wireless Last Mile Telephony Solution;
- 4) Completed knowledge sharing sessions on various topics;
- 5) Completed a social network analysis survey for ASTI; and

- 6) Instituted KM strategies, policies, and incentive schemes to promote a knowledge-sharing culture and behavior.

### Management Information Systems

The MIS team accomplished the following major undertakings:

- 1) Development of an online purchase request (PR) generator system;
- 2) Enhancement of the existing information system - an internal MIS portal;
- 3) Provision of technical support to e-NGAS;
- 4) Upgrading of the personal computers for the staff;
- 5) Development of a knowledge-based site including common downloadable forms; and



of the project, into major cooperation initiatives between the two regions;

- 2) Organization of an EU-Southeast Asia cooperation event in Europe and of awareness workshops in Southeast Asia; and
- 3) Development of a web-based communication platform devoted to EU-Southeast Asia S&T cooperation on ICT, part of an extensive set of promotion and dissemination activities.

research project entitled "Multicast Experiment using the Wideband InterNetworking Engineering and Demonstration Satellite (WINDS)". The agreement, which provides for the implementation of this project was signed last December 2007. The collaborative research experiment is being undertaken to confirm the function and effectiveness of WINDS. There are also plans to conduct applications experiment after this basic research experiment has been conducted. The applications experiment will be undertaken by ASTI and other partner institutions.

#### **Local Linkages**

Linkages with the local research and education community, government institutions, and the industry were also fostered. A number of these stakeholders are target beneficiaries of the technologies, systems, products,

and services developed and deployed by ASTI. The other partnerships forged were on the provision of technical trainings and connectivity to PREGINET. These institutions include the House of Representatives (HOR), Department of Foreign Affairs (DFA), Philippine Normal University (PNU), Computational Science Research Center, University of the Philippines (UP-CSRC), The National Library (TNL), among others.

### **Japan Aerospace Exploration Agency (JAXA)**

In collaboration with the Japan Aerospace Exploration Agency (JAXA), ASTI is currently implementing a

- 6) Provision of continuing technical IT support to staff.

### **Process Development**

For 2007, the Institute continued its effort on the updating of its Operations Manual. The manual documents outline the procedural guidelines and requirements in the implementation of the Institute's policies. Seven (7) processes were evaluated and documented in addition to the eighteen (18) processes that were already established in 2006. These additional processes were:

- 1) Personnel Selection;
- 2) Request for Overtime;
- 3) Non-Monetary Remuneration of Overtime services;
- 4) Request for Reservation of ASTI Facilities;
- 5) Request for Transportation;

- 6) Pass Slip Application and Approval; and

- 7) Application and Approval of Leave. ASTI was also able to complete the second process improvement workshop for procurement to improve the process, tools, and templates for procurement.

### **Electronic National Government Accounting System**

In the agency's efforts to improve operational efficiency and automate report generation in the accounting and budgetary functions, ASTI entered into an agreement with the Commission on Audit (COA) for the implementation of the Electronic New Government Accounting System (e-NGAS). The electronic accounting and budget system can automate the recording and preparation of accounting and budgetary forms; hence, the data can be automatically entered into the system for fast and easy report generation and data retrieval. The e-NGAS is expected to be fully operational by January 2008.

# FINANCIAL AND HUMAN RESOURCES MANAGEMENT



Personnel Distribution by Job Function

## Financial Resource

### External Resources Generated

To implement its various R&D programs and projects, ASTI, apart from its annual appropriations, received new financial support from various funding agencies totaling to PhP14,626 Million. This is in addition to the project funds amounting to more than PhP40 Million which were carried over from the previous year's releases for the operational and capital requirements of the agency's ongoing projects. Some of the significant projects implemented out of these funds were the development of a wood moisture meter, the e-Nutrition, and for the sustainable maintenance and operations of PREGINET.

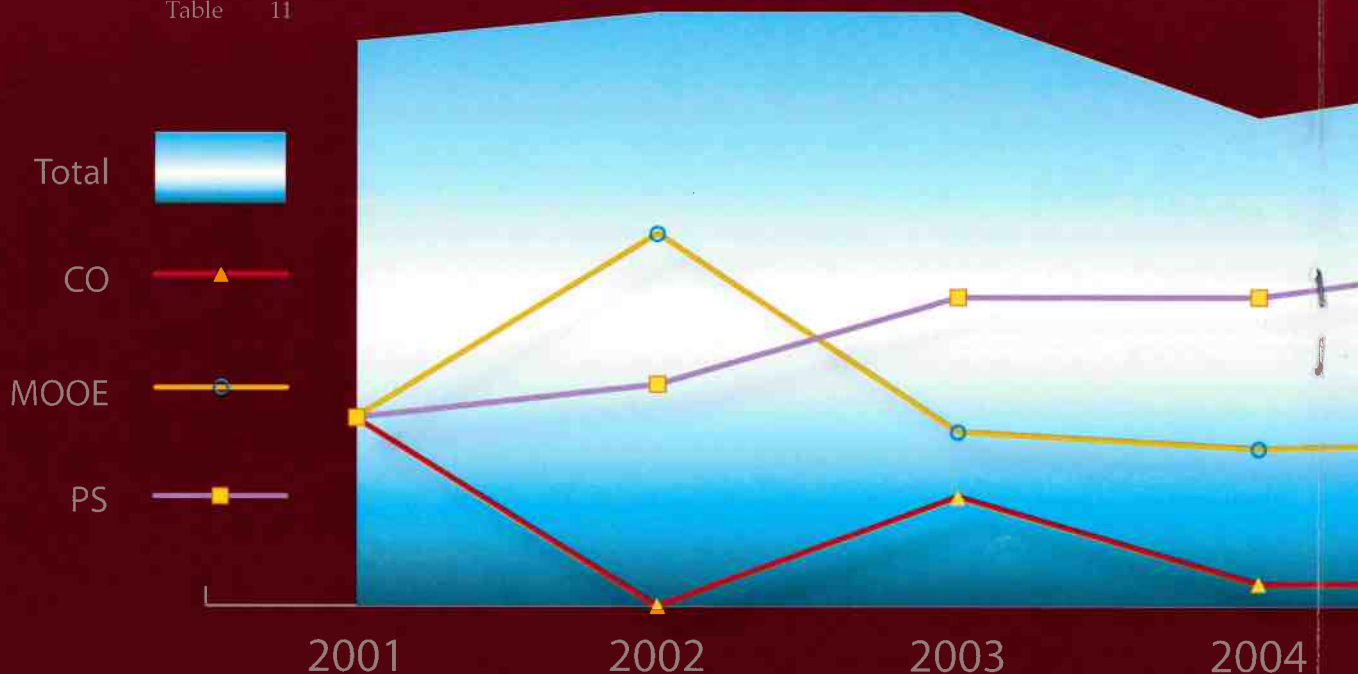
Table 11

provides the details on the external resource generated in 2007.

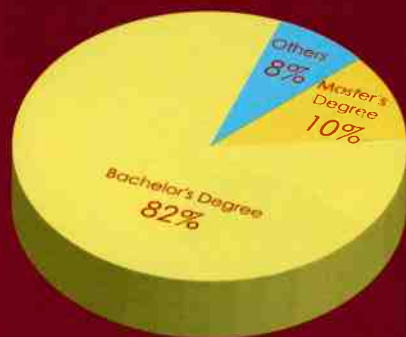
### Budget Trends

For the fiscal year 2007, ASTI was provided a total appropriation of PhP 30,898 Million, which was 11% higher from the previous year's PhP 3,468 Million as shown in Table 12. The agency's Personal Services (PS) budget has maintained its PhP 18 Million level with a slight decrease of PhP 0.724 Million, while the Maintenance and Other Operating Expenses (MOOE) budget has not changed since its FY 2005's MOOE level of PhP 7,508 Million. This year's budget increase was attributed to the Capital Outlay budget's augmentation of PhP 4,195 Million for the institute's funding requirements for equipment purchases and a major

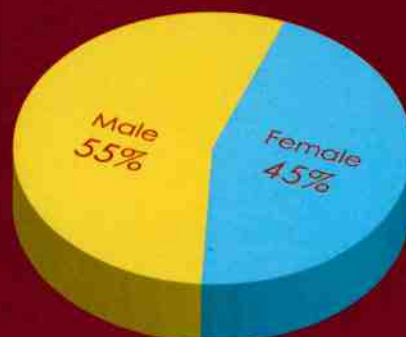
Budget Trend 2001-2007  
(in Million Pesos)







Personnel Distribution by Educational Attainment



Personnel Distribution by Gender



Personnel Distribution by Age Group

building repair. In 2008, the agency will have a PhP 44.741 Million budget, which is PhP 13.843 Million or 31% higher from the 2007 General Appropriations budget.

## Human Resource

In performing its mandated task, ASTI operates through its two (2) management and administrative divisions and four (4) technical divisions. Forty-two (42) regular plantilla personnel are positioned amongst its divisions. They are complemented by the project staff whose activities

are primarily focused in coming up with the project deliverables. With various backgrounds in information and communications technology, engineering, and the sciences, ASTI's technical personnel handles the agency's operations which mainly constitutes performing research and development work and providing IT services and solutions to its various stakeholders.

### 6 Divisions

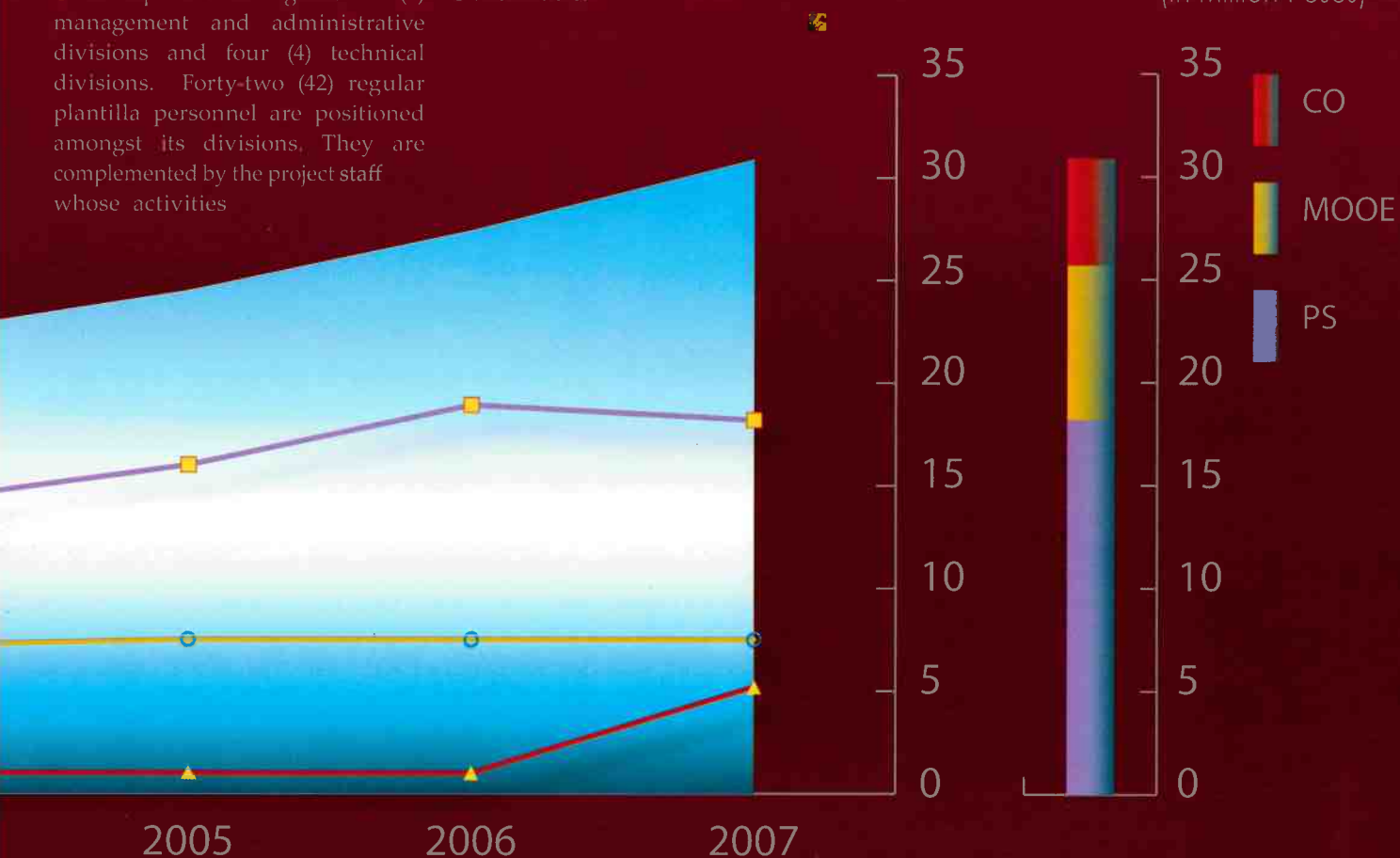
- 2 Administrative

- 4 Technical

### 115 Staff

- 42 Regular
- 73 Project Staff

ASTI 2007 Budget  
(in Million Pesos)



# 2007 ASTI OFFICIALS





**ASTI OFFICIALS** Denis F. Villoriente (Director), Jose Eric S. Maglanque (Chief, Special Projects Division), Alvin Retamar (Chief, Communications Engineering Division), (Seated) Atty. Carmencita M. Echano (Chief, Finance and Administrative Division), (Not in Picture) Peter Antonio B. Balzon (Chief, Computer Software Division)



# ORGANIZATIONAL STRUCTURE

## Office of the Director

The Office of the Director (OD) oversees the overall welfare of the agency, sets strategic direction, formulates internal policies and ensures the attainment of its goals and objectives. It plans and monitors research programs, projects and activities of the agency, sets performance indicators and evaluates agency performance based on the formulated indicators. The OD is likewise tasked to oversee the development of the competencies and expansion of the capabilities of the agency, establish and sustain partnerships and linkages with DOST and other organizations on R&D and technology transfer activities, and look for funding sources for the agency's different programs.







#### Finance and Administrative Division

The Finance and Administrative Division (FAD) provides support and administrative services such as the management of the Institute's properties and supplies, financial and human resources, and official records or documents.







### Microelectronics Division

The Microelectronics Division (MED) conducts research on microelectronics and grid computing, specifically on the use of computer clusters and reconfigurable devices for computation-intensive applications such as bioinformatics. It aims to upgrade the capability of faculty members of Philippine universities to enable them to offer courses on microelectronics. Hence, the division generates relevant training and course materials and conducts training. The self-paced learning modules in digital and analog IC design were developed by the group to guide lecturers and faculty in teaching these courses in their respective universities.



### Communications Engineering Division

The Communications Engineering Division (CED) implements projects on embedded systems, wireless communications, and advanced networking technologies and applications. It is involved in embedded software development and hardware design work. CED also maintains the ASTI Printed Circuit Board (PCB) laboratory and manages and operates PREGINET.



## Special Projects Division

The Special Projects Division (SPD) carries out ASTI's KM initiatives with the objective to leverage the Institute's intellectual capital to continuously improve and innovate its various programs and services. It promotes the institutionalization of KM systems and a knowledge culture within the agency and enhances the technical infrastructure for information access and knowledge sharing. It also takes the lead in the capture, harvesting, codification of individual and team know-how, experience, lessons, and best practices, and converting and sharing these as organizational learnings and public knowledge.







### Computer Software Division

The Computer Software Division (CSD) works on software-intensive projects from Information Systems to platform development and network-based applications. It is involved in the development and deployment of Open Source Systems like the Bayanihan Linux Desktop Solution. It is also in charge of the information systems development component of the projects e-Nutrition and TACIS. CSD also handles the development of Computer Aided Instruction for Science and Mathematics.



# MFO DATA

Table 1a – Technology Transfer Beneficiaries (Commercialized)

BENEFICIARY		TECHNOLOGIES TRANSFERRED		PERIOD OF ENGAGEMENT		NAME OF RESPONSIBLE AGENCY STAFF
Name of Enterprise	Address	Title	Description	Start	End	
Med Brilliance	Legaspi Village, Metro Manila	GSM Data Terminal	production of GSM Data Terminal unit	Q1	Q1	Alvin Retamar
CHED	5/F Upper DAP Bldg., San Miguel Ave., Ortigas Center	ASTI-developed Information System	provide technical assistance and trainings to CHED on the use, administration, customization, and proper maintenance of the ASTI-developed information system	Nov 2007	Jan 2008	Emily R. Pagador
Alabang Parts Center	Fabric Care Bldg., Almaden Uno Las Pinas City	GSM Data Terminal	production of GSM Data Terminal unit	Q1	Q1	Alvin Retamar
Asia Pacific College	Humabon St Magallanes Village, Makati City	GSM Data Terminal	production of GSM Data Terminal unit	Q1	Q1	Alvin Retamar
Centennial College	Calaca, Batangas	Bayanihan Linux 4	direct sale/ copying services	Q1	Q1	Emman Balintec
Lee Systems Technologies	Legaspi Village, Makati City	GSM Data Terminal	production of GSM Data Terminal unit	Q1	Q1	Alvin Retamar
Philhealth	Dagupan, Pangasinan	Bayanihan Linux 4	direct sale/ copying services	Q1	Q1	Emman Balintec
Radio Veritas Global Broadcasting	Near Star City, Roxas Blvd., Makati City	GSM Data Terminal	production of GSM Data Terminal unit	Q1	Q1	Alvin Retamar
DOST	Bicutan, Taguig	Bayanihan Linux 4	direct sale/ packaged wth training	Q1	Q2	Emman Balintec
Other professionals and individuals (for personal use, testing and evaluation)		Bayanihan Linux 4	direct sale/ copying services	Q1	Q4	Emman Balintec
Professionals and students (clients of Alexan Commercial)		Digital Multimeter	sale of units of DMM by Alexan Commercial	Q1	Q4	Narcisa Juvilyn Castañeda
Bayantrade	Fort Bonifacio Global City, Taguig City	Bayanihan Linux 4	packaged wth training	Q2	Q2	Emman Balintec
Cerulean Software	Unit 15-C 15th Floor Rufino Pacific Tower Ayala Avenue, Makati City	GSM Data Terminal	production of GSM Data Terminal unit	Q2	Q2	Alvin Retamar
Information System & Management Office (ISMO) of National Defense Coordinating Council	Camp Aguinaldo, Metro Manila	PicMe Microcontroller Starter Kit	production of PicMe Microcontroller Starter Kit	Q2	Q2	Alvin Retamar
La Sallet School Dagupan City	Dagupan, Pangasinan	Bayanihan Linux 4	direct sale/ copying services	Q2	Q2	Emman Balintec



BENEFICIARY		TECHNOLOGIES TRANSFERRED		PERIOD OF ENGAGEMENT		NAME OF RESPONSIBLE AGENCY STAFF
Name of Enterprise	Address	Title	Description	Start	End	
Tanza Child Development Center (TCDC)	Arca St., Biwas, Tanza, Cavite	PicMe Microcontroller Starter Kit	production of PicMe Microcontroller Starter Kit	Q2	Q2	Alvin Retamar
UP Los Banos	Laguna	PicMe Microcontroller Starter Kit	production of PicMe Microcontroller Starter Kit	Q2	Q2	Alvin Retamar
Bluepoint Institute	Quezon City	Bayanihan Linux 4	direct sale/copying services/packaged with training	Q4	Q4	Emman Balintec
PSHS	Quezon City	Digital Electronics Design Camp with Blended Learning Component»	production of 210 units of PicMe Microcontroller Starter Kit suitable for use by secondary school students	Sept 2007	June 2008	Alvin Retamar

**Table 1b – Technology Transfer Beneficiaries (Diffusion)**  
*Info dissemination thru demos, roadshows, exhibits, techtalk, contest, BL downloads*

BENEFICIARY		TECHNOLOGIES DIFFUSED		PERIOD OF ENGAGEMENT		NAME OF RESPONSIBLE AGENCY STAFF
Name of Enterprise	Address	Title	Description	Start	End	
Batangas State University	Batangas	Bayanihan Linux 4	Product / technology demonstration / presentation	Q1	Q1	Emman Balintec
APAN participants (International and Local Participants)	International and Local	Novel Bioinformatics Visualization Technique	Lecture presentation	Q1	Q1	Mary Grace Dy Jongco
Batangas State Univ.	Batangas	Bayanihan Linux, and VoIP	Product / technology demonstration / presentation	Q1	Q1	Emman Balintec for BL/Ceejay Dideles for VoIP
Bulacan State Univ.	Bulacan	Bayanihan Linux, and VoIP	Product / technology demonstration / presentation	Q1	Q1	Emman Balintec for BL/Ceejay Dideles for VoIP
CSRC	UP Diliman, Quezon City	Grid setup	Lecture presentation	Q1	Q1	Mary Grace Dy Jongco
ITDI	Bicutan, Taguig	TACIS ver. 1	Demo presentation	Q1	Q1	Paul Serrano
MIRDC	Bicutan, Taguig	TACIS ver. 1	Demo presentation	Q1	Q1	Paul Serrano
PAGASA	Agham Road, Quezon City	Grid setup	Lecture presentation	Q1	Q1	Mary Grace Dy Jongco
Paibare Inc.		ASTI Technologies	Product / technology demonstration / presentation	Q1	Q1	Jose Eric Maglanque/ASTI Technical Divisions
Palawan Technological College, Inc.	Palawan	Bayanihan Linux 4	Product / technology demonstration / presentation	Q1	Q1	Emman Balintec
Palawan Technological College, Inc.	Palawan	Bayanihan Linux, and VoIP	Product / technology demonstration / presentation	Q1	Q1	Emman Balintec for BL/Ceejay Dideles for VoIP

BENEFICIARY		TECHNOLOGIES DIFFUSED		PERIOD OF ENGAGEMENT		NAME OF RESPONSIBLE AGENCY STAFF
Name of Enterprise	Address	Title	Description	Start	End	
TRI	Bicutan, Taguig	TACIS ver. 1	Demo presentation	Q1	Q1	Paul Serrano
Univ. of Northern Phils Ilocos Sur	Ilocos Sur	Bayanihan Linux, and VoIP	Product / technology demonstration / presentation	Q1	Q1	Emman Balintec for BL/Ceejay Dideles for VoIP
Other individuals and professionals who downloaded versions of the Bayanihan Linux software	various	Bayanihan Linux 2.3.1, 4.0, BL beta versions, Bayanihan Linux Server 2005 and 2006	Downloading of various BL versions	Q1	Q4	Emman Balintec
Jose Rizal University (JRU)	Metro Manila	ASTI FPGA boards	FPGA-Based Design Competition	Q2	Q1 2008	Mary Grace Dy Jongco
Mapua Institute of Technology (MIT)	Manila	ASTI FPGA boards	FPGA-Based Design Competition	Q2	Q1 2008	Mary Grace Dy Jongco
Mindanao State University (MSU-Ajratani)	Marawi Citi	ASTI FPGA boards	FPGA-Based Design Competition	Q2	Q1 2008	Mary Grace Dy Jongco
Mindanao State University-Iligan Institute of Technology (MSU-IIT)	Iligan	ASTI FPGA boards	FPGA-Based Design Competition	Q2	Q1 2008	Mary Grace Dy Jongco
University of San Carlos (USC)	Cebu	ASTI FPGA boards	FPGA-Based Design Competition	Q2	Q1 2008	Mary Grace Dy Jongco
University of San Jose-Recoletos (USJR)	Cebu City	ASTI FPGA boards	FPGA-Based Design Competition	Q2	Q1 2008	Mary Grace Dy Jongco
University of the Philippines-Diliman	UP Campus, Diliman, Quezon City	ASTI FPGA boards	FPGA-Based Design Competition	Q2	Q1 2008	Mary Grace Dy Jongco
UP Los Banos	Los Banos, Laguna	ASTI FPGA boards	FPGA-Based Design Competition	Q2	Q1 2008	May Celicious
2-CARRD (Caraga-Consortium for Agriculture Regional R&D)		Videoconferencing and LAN set up	Product / technology demonstration / presentation	Q2	Q2	Mary Grace Dy Jongco
POST Central Office	Bicutan, Taguig	Bayanihan Linux 4	Product / technology demonstration / presentationDistribution of CDs	Q2	Q2	Emman Balintec
Eastern Visayas State Univ.	Tacloban, Leyte	Bayanihan Linux 4	Product / technology demonstration / presentation/distribution of complimentary copies	Q2	Q2	Emman Balintec
Eastern Visayas State Univ.	Tacloban, Leyte	Bayanihan Linux, and VoIP	Product / technology demonstration / presentation	Q2	Q2	Emman Balintec for BL/Ceejay Dideles for VoIP
Fullbright College	Palawan	Bayanihan Linux, and VoIP	Product / technology demonstration / presentation	Q2	Q2	Emman Balintec for BL/Ceejay Dideles for VoIP
Fullbright College	Palawan	Bayanihan Linux 4	Product / technology demonstration / presentation/distribution of complimentary copies	Q2	Q2	Emman Balintec



BENEFICIARY		TECHNOLOGIES DIFFUSED		PERIOD OF ENGAGEMENT		NAME OF RESPONSIBLE AGENCY STAFF
Name of Enterprise	Address	Title	Description	Start	End	
House of Representatives (HOR)	Batasan, Quezon City	PREGINET connectivity	Product / technology demonstration / presentation	Q2	Q2	Mary Grace Dy Jongco
Prof. Romeo G. Solis	Tanza, Cavite	PicMe Starter Kit	Product / technology demonstration / presentation	Q2	Q2	Alvin Retamar
Rep. From Passi City of Iloilo, and DTI	Batasan Pambansa, Quezon City	Bayaihan Linux 4	Distribution of CDs	Q2	Q2	Emman Balintec
Soniford	Metro Manila	Dental Camera prototype	Product demo/pre-sentation	Q2	Q2	Alvin Retamar
STI e-College Southwoods	Cavite	Bayanihan Linux, and VoIP	Product / technology demonstration / presentation	Q2	Q2	Emman Balintec for BL/Ceejay Dideles for VoIP
Tarlac State Univ.,	Tarlac	Bayanihan Linux 4	Product / technology demonstration / presentation/distribution of complimentary copies	Q2	Q2	Emman Balintec
Univ. of San Carlos Technological Center	Cebu	Bayanihan Linux, and VoIP	Product / technology demonstration / presentation	Q2	Q2	Emman Balintec for BL/Ceejay Dideles for VoIP
Universidad de Zamboanga	Zamboanga	Bayanihan Linux 4	Product / technology demonstration / presentation/distribution of complimentary copies	Q2	Q2	Emman Balintec
2007 NSTW guests/participants	Phil. Trade Training Center	TACIS, E-Nutrition, Bayanihan Linux (BL), BL Server 2006, PREGINET, PICWIN, Severe Weather Monitoring thru SMS	Product / technology demonstration / presentation of ASTI products and technologies	Q3	Q3	Paul Serrano/Emman Balintec
Bluepoint Institute of Higher Education	Katipunan Rd, Quezon City	Bayaihan Linux 4	CD donation	Q3	Q3	Emman Balintec
CIDA	Metro Manila	Bayaihan Linux 4	CD donation	Q3	Q3	Emman Balintec
Department of Budget and Management (DBM)	Manila	Bayaihan Linux 4	CD donation	Q3	Q3	Emman Balintec
Eagle Broadcasting Network	Metro Manila	Bayaihan Linux 4	CD donation	Q3	Q3	Emman Balintec
NCC	C.P. Garcia Ave., Quezon City	Bayaihan Linux 4	CD donation	Q3	Q3	Emman Balintec
Office of Congressman Abante	Batasan Pambansa, Quezon City	Bayaihan Linux 4	CD donation	Q3	Q3	Emman Balintec
PCARRD	Los Banos, Laguna	Asterisk VoIP	Product / technology demonstration / presentation	Q3	Q3	Ceejay Dideles
SMARRDEC (Southern Mindanao Agriculture Regional R&D Consortium)	Univ. of Southeastern Philippines	Videoconferencing and LAN set up	Product / technology demonstration / presentation	Q3	Q3	Mark Christian D. Mijares
UP Linux Users Group (UnPLUG)	UP Campus, Diliman, Quezon City	Bayaihan Linux 4	CD donation	Q3	Q3	Emman Balintec
FOSS training participants		Bayaihan Linux 4	CD donation	Q4	Q4	May Celicious

BENEFICIARY		TECHNOLOGIES DIFFUSED		PERIOD OF ENGAGEMENT		NAME OF RESPONSIBLE AGENCY STAFF
Name of Enterprise	Address	Title	Description	Start	End	
MSU-IIT	Iligan	PREGINET	PREGINET connectivity and benefits	Q4	Q4	Emman Balintec
Office of Congressman Roberto V. Puno	Bataa	Bayaihan Linux 4	CD donation	Q4	Q4	May Celicious
PREGINET partners and other institutions	Dumaguete City	PREGINET	Roadshow discussing PREGINET network upgrade, infrastructure, services, plans, etc.	Q4	Q4	Denis F. Villoriente/ May Celicious
PREGINET partners and other institutions (Region VII)	Cebu City	PREGINET	Roadshow discussing PREGINET network upgrade, infrastructure, services, plans, etc.	Q4	Q4	Denis F. Villoriente/ May Celicious
PREGINET partners and other institutions (Region X)	Cagayan de Oro and Iligan City	PREGINET	Roadshow discussing PREGINET network upgrade, infrastructure, services, plans, etc.	Q4	Q4	Denis F. Villoriente/ May Celicious
Xavier University		PREGINET	PREGINET connectivity and benefits	Q4	Q4	May Celicious

Table 2 – R&D Projects Conducted

TITLE OF R&D PROJECT	SOCIO-ECONOMIC OBJECTIVE	CONTRACT RESEARCH YES/NO	PROJECT DURATION		PROJECT LEADER		EXPENDITURE	FUNDING SOURCE	STATUS
			Start	End	Name	Email			
Microelectronics Design for Philippine Electronics Industry, An Essential Component for Global Competitiveness: Phase II - Digital, Analog & Mixed Signal Components for Signal Processing and Wireless Applications	Others: Microelectronics and access to technology and information	No	Dec 1, 1999	Feb 28, 2007	Aileen Deoma (resigned) Mary Grace Dy Jongco	gracedj@asti.dost.gov.ph	6,947,209	DOST-GIA	Completed
Development of a High Performance Research and Education Network: Philippine Research, Education and Government Information Network or PREGINET	ICT and access to information	No	June 1, 2000	Dec 31, 2007	Denis F. Villoriente	denis@asti.dost.gov.ph	4,988,293	DOST-GIA	Completed
Embedded Systems and Programmable Logic Systems Development	ICT and access to information; Industrial production and technology	No	June 2001	Continuing (dev and enhancement)	Jesus C. Manio (resigned) Alvin Retamar (OIC)	ning@asti.dost.gov.ph	333,563	ASTI	On-going
Radio Frequency (RF) Microelectronics for Wireless Technologies: Phase II - Development of Advanced Broadband Wireless System	ICT and access to information	No	Aug 1, 2002	Dec 31, 2007	Jesus C. Manio (resigned) Denis F. Villoriente	denis@asti.dost.gov.ph	-	DOST-GIA	Completed



TITLE OF R&D PROJECT	SOCIO-ECONOMIC OBJECTIVE	CONTRACT RESEARCH YES/NO	PROJECT DURATION		PROJECT LEADER		EXPENDITURE	FUNDING SOURCE	STATUS
			Start	End	Name	Email			
PAGASA Interactive Climate and Weather Information Network (PICWIN)	ICT and access to information	No	Jan 1, 2005	June 30, 2007	Jesus C. Manio (resigned)/ Alvin Retamar (OIC)	ning@asti.dost.gov.ph	-	DOST-CICT (e-gov fund)	Completed
Knowledge Network-ing Towards Enterprising Agricultural Communities (K-AGRINET): e-Farm & e-Consortia	ICT and access to information	No	Dec 1, 2005	May 31, 2008	Denis F. Villorente	denis@asti.dost.gov.ph	25,496,179	CICT	On-going
Development and Commercialization of a Locally Designed Digital Wood Moisture Meter (TECHNICOM)	Industrial production and technology	No	Dec 2006	Aug 19, 2007 (extension until June 2008)	Alvin Retamar	ning@asti.dost.gov.ph	367,756	DOST-TECHNICOM	On-going
Digital Electronics Design Camp with Blended Learning Component (joint research with PSHS)	Industrial production and technology	Yes	Sept 2007	June 2008	Alvin Retamar	ning@asti.dost.gov.ph	-	DOST-SEI	New
Tests, Analyses, and Calibration Information Systems (TACIS; Extension from Jan 2008 – Dec 2008)	ICT and access to information	No	Jan 1, 2005	Dec 31, 2007	Peter Antonio B. Banzon	peter@asti.dost.gov.ph	34,053,856	DOST-CICT (e-gov fund)	On-going
Establishment of the Philippine's Knowledge Center on Food and Nutrition	ICT and access to information	No	Jan 1, 2005	Dec 31, 2007	Peter Antonio B. Banzon	peter@asti.dost.gov.ph	23,756,087	DOST-CICT (e-gov fund)	Completed
Development of National Biosafety Clearing House Online Information System	ICT and access to information	No	Sept 2007	Nov 2007	Joan Syjuco	joan@asti.dost.gov.ph	238,531	PCASTRD	On-going
Computer-Aided Instructions for Elementary (Phase 3)	ICT and access to information	No	Oct 1, 2007	Dec 31, 2007	Peter Antonio B. Banzon	peter@asti.dost.gov.ph	101,149	SEI	Completed
Design and Development of DOST On-line Information Systems (Balik Scientist Program, Scientific Career System, Japan Society for Promotion of Science)	ICT and access to information	No	July 2007	Sept 007	Joan Syjuco	joan@asti.dost.gov.ph	116,424	DOST-GIA	Completed
Upgrading of Facilities for the DOST RDIs in Support of R&D and S&T Services	ICT and access to information	No	July 2007	June 2010	Peter Antonio B. Banzon	peter@asti.dost.gov.ph	896,461	DOST-GIA	New
Bayanihan Linux Development	ICT and access to information	No	2006	2008	Peter Antonio B. Banzon	peter@asti.dost.gov.ph	13,300	ASTI	On-going

Table 3 – ASTI Personnel

CATEGORY	NUMBER	% DISTRIBUTION
Total Number of Personnel	115	-
<i>By Job Function</i>		
Administration and Management	38	33

CATEGORY	NUMBER	% DISTRIBUTION
Technical	77	67
<i>By Position Status</i>		
Regular	42	37
Project contractual	73	63
<i>By Gender</i>		
Male	63	55
Female	52	45
<i>By Age Group</i>		
20 years old and below	3	3
21-30	83	72
31-40	20	17
41-50	7	6
51-60	2	2
60 years old and over	-	-
<i>By Educational Attainment</i>		
With PhD	-	-
Master's Degree	12	10
Bachelor's Degree	94	82
Others	9	8

Table 4 – Intellectual Property

TITLE/DESCRIPTION OF INTELLECTUAL PROPERTY	REGISTRY NO.	TYPE OF IP	NAME OF RESEARCHER/INVENTOR	STATUS	DATE FILED/ GRANTED
"Bayanihan Linux 4 Manual"	A2007-875	Copyright	Jaime Sebastian G. Sicam, Janice M. Ball-esteros, Emmanuel P. Balintec, Katrina T. Murga, & Janice C. Carpo	Granted	Apr 25, 2007
"Self-Paced Learning Modules for Digital and Analog Integrated Circuit Design Courses ( <i>Unit 1-4, and Laboratory Manual</i> )"/A 2006-3242	A 2006-3242	Copyright	Mary Grace C. Dy Jongco, Jeffreyk S. Mendiola, Aaron S. Cabuling, Benson T. Siongco	Granted	Nov 15, 2006
User Manual: Bayanihan Linux Thin Client Manager, Your Total Linux Thin Client Solution	A 2005-2508	Copyright	Peter Antonio B. Banzon, Joanna S. Gonzales, Joseph F. Syjuco, Geraldine I. Lugod, Arjyl V. Betan, Ryan Joshua B. Asuncion, Rusnell A. Espinoza	Granted	Dec 8, 2005
Bayanihan Linux Thin Client <b>Manager Software</b>	N 2005-185	Copyright	Peter Antonio B. Banzon, Joanna S. Gonzales, Joseph F. Syjuco, Geraldine I. Lugod, Arjyl V. Betan, Ryan Joshua B. Asuncion, Rusnell A. Espinoza	Granted	Dec 8, 2005
Handbook of Practical Tips in FPGA-Based Design Using VHDL	A 2005-2507	Copyright	Jose Redentor A. Glifonea, Carmelo D. Cayaban, Rowena D. Saldaña	Granted	Dec 8, 2005



TITLE/DESCRIPTION OF INTELLECTUAL PROPERTY	REGISTRY NO.	TYPE OF IP	NAME OF RESEARCHER/INVENTOR	STATUS	DATE FILED/ GRANTED
Microprocessor Controlled Human Milk Pasteurizer	Application No. 2-2003-000475	Utility model	Vincent Peter C. Valentus, Zandro Luis Gonzales, Bienvenido Galang, Gloria Baens Ramirez, Cristina Vince Cruz, Nenita del Rosario,	Filed	Dec 4, 2003

Table 5 – Scientific Papers Published or Presented

TITLE OF SCIENTIFIC PAPER	NAME OF AUTHOR/S		PUBLICATIONS	
	NAME	EMAIL	Name and Type of Journal	Date Published or Presented
Presentation of paper entitled “Grid Computing for Bioinformatics: A Review and Feasibility Study of the Available Grid Architectures, Software Packages and Database Systems”	Rey Vincent Babilonia; Carlo Lapid	rvincent@asti.dost.gov.ph	8th National ECCE Conference/ Local	Nov 24, 2007

Table 6 – Research Contracts Implemented

TITLE OF R&D PROJECT	NAME OF BUSINESS/ ORGANIZATION	CONTACT PERSON
Installation of New IP-PABX Telephone System Including Integration of Paging System	Bicol Medical Center – Department of Health Regions II-IV	Dr. Ruben R. Peñañiel / OIC, Bicol Medical Center
Customization of the ASTI-developed <b>information</b> system for CHED's use	<b>Commission</b> on Higher Education ( <b>CHED</b> )	Mr. Charlie Calimlin, Division Chief, MIS/ Dr. William C. <b>Medrano</b> , <b>Executive</b> Director
Digital Electronics Design Camp with Blended Learning Component <i>(joint research with PSIIS)</i>	Philippine Science High School	Dr. Filma Brawner, <i>(Executive Director)</i>

Table 7 – Technical Training Courses Conducted

TITLE OF TRAINING	VENUE	NO. OF PARTICIPANTS	INCLUSIVE DATES CONDUCTED		FUNDING SCHEME
			Start	End	
“23rd Asia Pacific Advanced Network <i>(APAN)</i> Conference”	EDSA Shangri-la Hotel, Bus. District, Mandaluyong City, Metro Manila	260	Jan 22, 2007	Jan 26, 2007	DOST-subsidized/ Foreign-subsidized
“BGP Multihoming Techniques”	Shangri-la Hotel, Makati City	68	Jan 26, 2007	Jan 26, 2007	Individually paid
“Design and Construction of Local and Regional Exchange Facilities”	Shangri-la Hotel, Makati City	68	Jan 26, 2007	Jan 26, 2007	Individually paid
Bioinformatics Symposium	ASTI	25	Feb 23, 2007	Feb 23, 2007	
“PHP and MySQL”	ASTI	34	Feb 26, 2007	Mar 9, 2007	Company sponsored
“Xilinx Tool”	ASTI	22	Mar 14, 2007	Mar 15, 2007	
Training on TACIS ver. 1.0	DOST VII, Cebu City	12	Mar 26, 2007	Mar 29, 2007	DOST-subsidized
Training on TACIS ver. 1.0	DOST XI, Davao City	13	Mar 28, 2007	Mar 31, 2007	DOST-subsidized
Training on TACIS ver. 1.0	DOST IV, Los Banos, Laguna	20	Apr 18, 2007	Apr 21, 2007	DOST-subsidized
“IRME” training <i>(co-organized with APNIC &amp; USC Cebu)</i>	Cebu	15	Apr 23, 2007	Apr 23, 2007	APNIC

TITLE OF TRAINING	VENUE	NO. OF PARTICIPANTS	INCLUSIVE DATES CONDUCTED		FUNDING SCHEME
			Start	End	
"Advanced DNS"	Cebu	15	Apr 24, 2007	Apr 27, 2007	APNIC
"BL4 and Open Office 2.2"	Bayantrade Office, Taguig	22	Apr 26, 2007	Apr 27, 2007	Company sponsored
"Appreciation Course on BL4"	DOST-CO, Bicutan, Taguig	58	May 18, 2007	May 18, 2007	DOST-subsidized
"BL4 Training for Users"	ASTI	14	May 21, 2007	May 21, 2007	DOST-subsidized
"BL4 Training for Administrators"	ASTI	15	May 24, 2007	May 25, 2007	DOST-subsidized
"BL and Thin Client"	ASTI	35	May 28, 2007	Jun 1, 2007	DOST-subsidized
"Open Office"	ASTI	17	May 31, 2007	Jun 1, 2007	DOST-subsidized
Java Training	ASTI		Jul 9, 2007	Jul 10, 2007	Company sponsored
Java Training	ASTI		Jul 23, 2007	Jul 25, 2007	Company sponsored
VOIP	ASTI	84	Jul 18, 2007	Jul 18, 2007	DOST-subsidized
Bayanihan Linux	ASTI	27	Jul 18, 2007	Jul 18, 2007	DOST-subsidized
PhilOpen IX	ASTI	14	Jul 18, 2007	Jul 18, 2007	DOST-subsidized
FPGA	ASTI	12	Jul 18, 2007	Jul 18, 2007	DOST-subsidized
DNS	ASTI	36	Jul 18, 2007	Jul 18, 2007	DOST-subsidized
Thin Client	ASTI	8	Jul 18, 2007	Jul 18, 2007	DOST-subsidized
Introduction to VoIP	ASTI	30	Aug 22, 2007	Aug 22, 2007	Company sponsored
gov.ph (DNS) Appreciation Seminar	ASTI	19	Sep 7, 2007	Sep 7, 2007	Individually paid
gov.ph (DNS) for technical	ASTI	14	Sep 10, 2007	Sep 10, 2007	Individually paid
			Sep 17, 2007	Sep 17, 2007	Individually paid
Open Office	ASTI	20	Oct 23, 2007	Oct 24, 2007	Company sponsored
Open Source Email System	ASTI	12	Nov 7, 2007	Nov 7, 2007	Individually paid
Philippine Open Source Essentials	ASTI	28	Nov 21, 2007	Nov 23, 2007	Individually paid
ISP/IXP Routing Workshop	ASTI	33	Dec 3, 2007	Dec 7, 2007	Individually paid
IPV6 Operations Workshop (combo with VoIP)	ASTI	9	Dec 3, 2007	Dec 7, 2007	Individually paid
VoIP/SIP Administration	ASTI	6	Dec 3, 2007	Dec 7, 2007	Individually paid
E-Nutrition Training (Users and Moderators)	FNRI	14	Sep 3, 2007	Sep 3, 2007	Company sponsored
E-Nutrition Training (Basic Administrators Training)	FNRI	2	Sep 12, 2007	Sep 12, 2007	Company sponsored
E-Nutrition Training (Users and Moderators)	FNRI	14	Sep 17, 2007	Sep 17, 2007	Company sponsored
E-Nutrition Training (Firewall, APACHE, DNS, Proxy, MySQL)	FNRI	2	Sep 2007	Sep 2007	Company sponsored
oomla CMS Training	DOST	16	Sep 24, 2007	Sep 24, 2007	Company sponsored
oomla CMS Training	DOST	15	Sep 25, 2007	Sep 25, 2007	Company sponsored



TITLE OF TRAINING	VENUE	NO. OF PARTICIPANTS	INCLUSIVE DATES CONDUCTED		FUNDING SCHEME
			Start	End	
Training for DOST on SCS ( <i>Scientific Career System</i> )	DOST	9	Sep 26, 2007	Sep 26, 2007	Company sponsored
E-Nutrition Training	UP Los Banos	30	Aug 29, 2007	Aug 29, 2007	Company sponsored

Table 8 – Technical Services Rendered

BENEFICIARY <i>Enterprise / Organization</i>		TECHNICAL SERVICES RENDERED	INCLUSIVE DATES OF ENGAGEMENT		FIELD STAFF
Name	Address		Start	End	
CV-CIRRD	Negros Occidental	Deployment of dedicated links	Q1	Q1v	Geraldine Oña
DOST IV	Los Banos, Laguna	Provide assistance in the operation/testing/migration of TACIS/deployment	Q1	Q1	Francis Enrile ( <i>resigned</i> )/Paul Serrano
PCARRD	Los Banos, Laguna	Provide assistance on PCARRD's videocon event at Bethel Inn, Dumaguete City	Q1	Q1	Mark Christian Mijares/Mark Terrado
TELOF XI		Circuit configuration	Q1	Q1	Benjamin Lara
VICARP	Leyte State Univeristy, Leyte	Deployment of dedicated links	Q1	Q1	Geraldine Oña
		Installation and operation of the I-root DNS mirror servers ( <i>under the Asia Pacific I-Root Server Deployment Project</i> )	Q1	Q1	Benjamin Lara
DOST	Bicutan, Taguig	Continuous maintenance , monitoring and updating of TACIS servers	Q1	Q2	Paul Serrano
Region VII		Continuous maintenance , monitoring and updating of TACIS servers	Q1	Q2	Paul Serrano
Region XI		Continuous maintenance , monitoring and updating of TACIS servers	Q1	Q2	Paul Serrano
Government Institutions/ Academe and Research Institutions	nationwide	Maintenance of network connections of PREGINET partner institutions	Q1	Q4	May Celicious
National and Local Government Institutions	nationwide	Maintenance of .gov.ph domain name registry ( <i>creation, approval, modification, deletion</i> )	Q1	Q4	Emily R. Pagador
PCARRD's Regional Offices and Community Centers ( <i>FITS Centers and Regional Consortia</i> )	nationwide	Maintenance of K-AGRINET network links	Q1	Q4	Geraldine Oña
Bicol Medical Center	Naga City, Camarines Sur	Network maintenance and upgrade of BGP network for BMC	Q2	Q2	Geraldine Oña
DOST	Bicutan, Taguig, Metro Manila	Troubleshooting of DOST webmail server	Q2	Q2	Benjamin Lara

BENEFICIARY		TECHNICAL SERVICES RENDERED	INCLUSIVE DATES OF ENGAGEMENT		FIELD STAFF		
Enterprise / Organization							
Name	Address		Start	End			
DOST	Bicutan, Taguig	Design, development, and deployment of OASECTT-DOST's online information systems namely, Balik Scientist Program, Scientific Career System, and Japan Society of the Promotion of Science	Q2	Q2	Joanna Syjuco		
IRRI	Los Baños, Laguna	Troubleshooting of IRRI access grid	Q2	Q2	Benjamin Lara		
National Computer Center	Quezon City, Metro Manila	Provided technical assistance on NCC's backup system	Q2	Q2	Benjamin Lara		
PCIERD	Bicutan, Taguig	Videostreaming during PCIERD anniversary	Q2	Q2	May Celicious		
PGH	Manila	Videoconferencing of PGH and Japan	Q2	Q2	May Celicious		
IRRI	Los Banos	Upgrade/reconfiguration of Access Grid	Q3	Q3	Ceejay Dideles/Zeppy Vilan		
Negros Occidental University (NORSU)	Negros Occidental	Installation of CISCO router for CV-CIRRD	Q3	Q3	Geraldine Oña		
PCASTRD	Bicutan, Taguig, Metro Manila	Videostreaming during Joint Project Meeting	Q3	Q3	May Celicious		
Development Academy of the Philippines	Pasig City, Metro Manila	Videoconferencing for the remote lectures of Harvard Universities, United Nations-Washington, Italy	Q4	Q4	May Celicious		
FPRDI	Laguna	Webhosting	Q4	Q4	May Celicious		
House of Representatives	Batasan Pambansa, Quezon City, Metro Manila	Mail Server Assistance	Q4	Q4	May Celicious		
House of Representatives	Batasan Pambansa, Quezon City	Webhosting	Q4	Q4	May Celicious		
Intellectual Property Office	Buendia, Makati City, Metro Manila	Webstreaming for Seminar on Music Artists' Intellectual Property Rights	Q4	Q4	Zeppy Vilan		
PNC-UNESCO-IHP	National Hydrolic Research Center, UP Diliman, Quezon City, Metro Manila	Videostreaming of UNESCO International Conference on Hydrology and Water Management	Q4	Q4	Benjamin Lara/Ceejay Dideles		

Table 9a – Beneficiaries of Consultancy Programs (Formal)

BENEFICIARY		TITLE OF CONSULTANCY SERVICES RENDERED	INCLUSIVE DATES OF ENGAGEMENT		FIELD STAFF
Enterprise / Organization					
Name	Address		Start	End	
City Government of Escalante	Negros Occidental	Design and Installation of the Wireless Network in Escalante City and the IP-PBX system at the Escalante City Hall	Dec 2005	Mar 2007	Geraldine Oña



Table 9b – Beneficiaries of Consultancy Programs (Non-Formal)

BENEFICIARY		TITLE OF CONSULTANCY SERVICES RENDERED	INCLUSIVE DATES OF ENGAGEMENT		FIELD STAFF
Enterprise / Organization					
Name	Address		Start	End	
Anti-Poverty Commission	Quezon City, Metro Manila	Inquiry on the <b>concepts</b> and principles of domain <b>subdelegation</b>	Q1	Q1	Emily R. Pagador
Associated Press		Inquiry thru walk-in, e-mail , SMS re: BL4	Q1	Q1	Kim Murga
Benguet State University	La Trinidad, Benguet	<b>Consultative</b> / Roundtable <b>discussion</b> / meetings, phone <b>inquiries</b> regarding PREGINET and K-AGRINET network <b>connectivity</b>	Q1	Q1	May Celicious
Centenial College	Batangas	Inquiry thru walk-in, e-mail , SMS re: BL4	Q1	Q1	Kim Murga
Crestivbox		Inquiry thru walk-in, e-mail , SMS re: BL4	Q1	Q1	Kim Murga
Digimarc ID Systems		Inquiry thru walk-in, e-mail , SMS re: BL4	Q1	Q1	Kim Murga
DOST		<b>RP-Taiwan</b> Round Table <b>Discussion</b> re: possible <b>venues/area</b> for <b>collaboration</b>	Q1	Q1	
DOST	Bicutan, Taguig	Roundtable Discussin on RP-Taiwan S&T Cooperation	Q1	Q1	Denis F. Villorente
DOT	Caraga	Inquiry on the concepts and <b>principles</b> of domain <b>subdelegation</b>	Q1	Q1	Emily R. Pagador
E-Nut Roadshow participants such as provincial health participants, municipal doctors/nutritionists/dieticians, and local officers	Roxas City; Guimaras, San Jose Antique, Negros Oriental, Cebu City	Resource Person: Talk on: E-Nutrition System	Q1	Q1	Geraldine Lugod
First Asia Institute of Technology and Humanities (FAITH)	Batangas	Inquiry thru walk-in, e-mail , SMS re: BL4	Q1	Q1	Kim Murga
FNRI	Bicutan, Taguig	Resource Speaker: Product / technology demonstration / presentation to municipal doctors, DepEd, DSWD, LGUs in Roxas City; Jordan, Guimaras; San Jose, Antique; Cebu; Dumaquete City, and Negros Or.	Q1	Q1	Geraldine Lugod (resigned)/Joanna Syjuco
Informatics	Metro Manila	Inquiry thru walk-in, e-mail , SMS re: BL4	Q1	Q1	Kim Murga
Leyte Metropolitan Water District	Leyte	Inquiry on the concepts and principles of domain subdelegation	Q1	Q1	Emily R. Pagador
Mabini College of Batangas	Batangas	Inquiry thru walk-in, e-mail , SMS re: BL4	Q1	Q1	Kim Murga
Metropolitan Trial Court	Metro Manila	Inquiry thru walk-in, e-mail , SMS re: BL4	Q1	Q1	Kim Murga
Municipality of Navotas	Metro Manila	Inquiry on the Domain name <b>registration</b>	Q1	Q1	Emily R. Pagador
NCC	Quezon City, Metro Manila	Inquiry on the concepts and principles of domain subdelegation	Q1	Q1	Emily R. Pagador
NCC Reg. 4 & 13,		Inquiry thru walk-in, e-mail , SMS re: BL4	Q1	Q1	Kim Murga
Nippon Express Phils. Corp.	Metro Manila	Inquiry thru walk-in, e-mail , SMS re: BL4	Q1	Q1	Kim Murga
Pateros Technological College	Metro Manila	Inquiry thru walk-in, e-mail , SMS re: BL4	Q1	Q1	Kim Murga
Philhealth	Quezon City, Metro Manila	Inquiry thru walk-in, e-mail , SMS re: BL4	Q1	Q1	Kim Murga
Representatives Electoral Tribunal	Metro Manila	Inquiry on the Setting up of domain and website	Q1	Q1	Emily R. Pagador

BENEFICIARY		TITLE OF CONSULTANCY SERVICES RENDERED	INCLUSIVE DATES OF ENGAGEMENT		FIELD STAFF
Enterprise / Organization					
Name	Address		Start	End	
Siix Logistics Phil., Inc.	Biñan, Laguna	Inquiry thru walk-in, e-mail , SMS re: BL4	Q1	Q1	Kim Murga
Theological Centrium		Inquiry thru walk-in, e-mail , SMS re: BL4	Q1	Q1	Kim Murga
UP CAPES (Career Assistance Program for Engineering Students)	UP College of Engineering	Resource speaker re: Embedded Systems Initiatives during the seminar "Alternative Career Paths"	Q1	Q1	
UST	España, Manila	Inquiry thru walk-in, e-mail , SMS re: BL4	Q1	Q1	Kim Murga
UST	Manila	Resource Speaker on BL4	Q1	Q1	Kim Murga
Zamboanga City Water District	Zamboanga	Inquiry on the concepts and principles of domain subdelegation	Q1	Q1	Emily R. Pagador
Benguet State Univ., DOST-CAR, K-AGRINET Regional Consortium in CAR, Fit Centers in the region		Consultative/Roundtable discussion of concerns on K-AGRINET and PREGINET connectivity	Q2	Q2	Geraldine Oña
Colegio de Sta Catalina de Alejandria	Dumaguete City	Resource Speaker: Training on Bayanihan Linux and Thin Client	Q2	Q2	Geraldine Lugod
Colegio de Sta Catalina de Alejandria	Dumaguete City	Resource Person: Forum on DOST's Educational Software and other IT Products	Q2	Q2	Geraldine Lugod
EUSU Leyte	Leyte	Inquiry thru walk-in, e-mail , SMS re: BL4	Q2	Q2	Kim Murga
Grant Thornton		Inquiry thru walk-in, e-mail , SMS re: BL4	Q2	Q2	Kim Murga
Institute of Electrical and Electronics Engineers, Inc. (Philippine Section)	Metro Manila	Evaluation of the proposal "Microcontroller Applications Design Competition (MADC)"	Q2	Q2	
MIT students	Metro Manila	Interview on Research Methods (for Speech Coder)	Q2	Q2	Carmelo Cayaban
PSHS-Cagayan Valley, Fit Centers in the region	Cagayan	Consultative/Rountable discussion of concerns on K-AGRINET and PREGINET connectivity	Q2	Q2	Geraldine Oña
Tarlac State Univ.	Tarlac	Inquiry thru walk-in, e-mail , SMS re: BL4	Q2	Q2	Kim Murga
Universidad De Zamboanga	Zamboanga	Inquiry thru walk-in, e-mail , SMS re: BL4	Q2	Q2	Kim Murga
AMA Computer College	AMA Bldg., Marcos Hi-way, Antipolo City	Resource Speaker: Introduction to VoIP Seminar	Q3	Q3	Ely Renario (resigned)/Ceejay Dideles
ANC Channel (Top Story Program)	Quezon City, Metro Manila	Interview re: ASTI's Broadband Project (PREGINET)	Q3	Q3	Denis F. Villorente
OZEM	Quezon City, Metro Manila	Radio interview re: PREGINET/OpenIX	Q3	Q3	Denis F. Villorente
GMA 7 (24 Oras TV Program)	Quezon City, Metro Manila	Interview re: PREGINET	Q3	Q3	Denis F. Villorente
Municipality of Gumaca	Quezon	Inquiry re: domain delegation and management	Q3	Q3	Emily R. Pagador
Municipality of San Isidro	Surigao	Inquiry re: domain delegation process	Q3	Q3	Emily R. Pagador
National Library of the Philippines	Manila	Inquiry re: use of Mambo CMS and iaccessible websites	Q3	Q3	Emily R. Pagador
National Telecommunication Commission	Quezon City, Metro Manila	Presentation of paper re: Ipv6 and ENUM to the 28th Anniversary of NTC	Q3	Q3	Denis F. Villorente



BENEFICIARY		TITLE OF CONSULTANCY SERVICES RENDERED	INCLUSIVE DATES OF ENGAGEMENT		FIELD STAFF
Enterprise / Organization					
Name	Address		Start	End	
Province of Davao del Sur	Davao del Sur	Inquiry re: domain delegation process	Q3	Q3	Emily R. Pagador
Young Software Engineers Society	Institute of Computer Science, UP Los Banos	Resource Speaker: ASTI Open Source Initiatives and Applications	Q3	Q3	Peter Banzon
Emmanuel G. Guim	Ateneo School of Government, Rockwell, Makati City	Survey re: Strengthening DOST S&T Services Through Technology Forecasting	Q4	Q4	Peter Banzon/Joric Maglanque
National Telecommunication Commission	Quezon City, Metro Manila	Presentation of paper re: Ipv6 and ENUM to the 36th Asian Info-Communications Council (AIC) Conference	Q4	Q4	Denis F. Villorente; Ceejay Dideles

Table 10 – International Scientific Linkages and Networks

SCIENTIFIC INSTITUTION		NATURE /DESCRIPTION OF SCIENTIFIC LINKAGES	DATES OF ENGAGEMENT	
Name of Institution	Location/ Country		Start	End
Ministry of Agriculture, Fisheries and Forestry Information Network (MAFFIN)	Japan	MAFFIN provides funding support for the establishment and maintenance of the Philippines' link to the Asia-Pacific Advanced Network (APAN)	2000	Ongoing
APAN (Asia-Pacific Advanced Network)	Japan	Collaborative R&D on advanced networking technologies and applications; Information exchange	May 28, 2003	Ongoing
Keio University	Japan	SOI Asia (School of Internet-Asia); Asian Internet Interconnection Initiatives (AI3); Trainings; information exchange	Oct 3, 2003	Ongoing
Trans-Eurasia Information Network 2 (TEIN2)	United Kingdom	Research and education connectivity to Europe and within the Asia-Pacific region; Trainings and other capability building initiatives; information exchange	Apr 21, 2004	Ongoing
Asia Pacific Network Information Centre (APNIC)	Australia	Internet operation and management; regional networking activities; training; information exchange	2000	Ongoing
Commission of the European Communities Information Society and Media Directorate-General (with Sigma Consultants (Orionis Division) in France, as Coordinator)	Belgium; France	Collaborative Project entitled "Further Developing Strategic R&D with South-East Asia on ICT (SEACOO)"	Sept 11, 2007	Ongoing
Japan Aerospace Exploration Agency (JAXA)	Japan	Multicast Experiment Using the Wideband InterNetworking Engineering Test and Demonstration Satellite (WINDS)	Dec 2007	Ongoing
Pacific Rim and Grid Middleware Assembly (PRAGMA)	USA	S&T Information Exchange through Grid Forum	2007	Ongoing
European Union-Asia Grid (EUAsiaGrid)	Italy	Requirement capture and coordination policy definition, support of scientific applications, dissemination, and training	Nov 2007	June 1, 2009
Enabling Grids for E-Science (EGEE)	EU	Informal collaboration on grid-related activities such as participation on grid events, and informal inquiries/consultations.	2007	Ongoing
National Institute for Advanced Industrial Science and Technology (AIST)	Japan	Informal collaboration on GEO Grid and sharing of the ASTER data	2007	Ongoing
International Open Source Network (IOSN)	National Telehealth Centre/Philippine (ASEAN HQ)	Informal collaboration on open source and open standards, promotion, and training	2005	Ongoing

SCIENTIFIC INSTITUTION		NATURE /DESCRIPTION OF SCIENTIFIC LINKAGES	DATES OF ENGAGEMENT	
<i>Name of Institution</i>	<i>Location/ Country</i>		<i>Start</i>	<i>End</i>
ASEAN Committee on S&T (COST)	Philippine counter-part (DOST)	S&T Information Exchange through the conduct of/attendance to conferences, S&T exhibition, and collaborative activities between member-countries		Ongoing

Table 11 – External Resources Generated

DONOR/NAME OF INSTITUTION		TITLE/DESCRIPTION OF ASSISTANCE	VALUE OF ASSISTANCE (IN PESOS)
DOST		Project funds for Wood Moisture Meter	624,025
PCASTRD		APAN Meeting Financial Assistance	100,000
Bicol Medical Center		Funds for Technical Assistance	30,000
City of Escalante		Consultation fee for design and installation of wireless network & IP-PBX System	50,000
SEI		Project Funds for Digital Electrical Design Camp with Blended Learning Component	450,000.00
PCASTRD		Project Funds for Development of National Biosafety Clearing House	275,000.00
National Library		Project Funds for December 2007	240,000.00
Partner Institutions		Philippines’ Research, Education and Government Information Network or PREGINET (subscription fee)	3,996,136
IRRI		Establishment of Access Grid Node and PREGINET connectivity at the International Rice Research Institute (IRRI)	129,854
European Commission		Participation/service fee of the Trans-Eurasia International Network 2 for the period covering January 1, 2007 to December 31, 2007	1,347,871
DOST		Support to the Implementation of the Balik Scientist Program (BSP) Pursuant to E.O. No. 130 dated 25 October 1993	42,000
DOST		Secretariat for the DOST-JSPS Joint Scientific Cooperation Program CY 2005	42,000
DOST		Secretariat to the Scientific Career Council Pursuant to Section 8 E.O.	42,000
DOST		NSTW 2007 Celebration- Internet Connectivity and Video Conferencing of the 2007 NSTW	92,500
DOST		Upgrading of Facilities of the DOST Research and Development Institutes (RDIs) in Support of Research and Development (R & D) and Scientific and Technological Services	7,014,400
DOST		Revision, Replication and Distribution of Coursewares in Science and Mathematics for Elementary Schools	150,000

Table 12 – Budget Trends (2002-2008)

OBJECT CLASS	Figures in Million Pesos						
	2001	2002	2003	2004	2005	2006	2007
PS	8.632	10.152	14.141	14.141	16.003	18.922	18.195
MOOE	8.662	17.062	7.983	7.210	7.508	7.508	7.508
CO	8.579	0.000	5.000	1.000	1.000	1.000	5.195
Total	25.873	27.214	27.124	22.351	24.511	27.430	30.898



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